Education
Walks

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INTRODUCTION

Teachers College, Columbia University, was, so far as I know, the first institution of higher learning to incorporate the kindergarten as the foundation of its educational system. This early recognition of the kindergarten as an organic part of education may be attributed to several causes. In the first place it may be traced to the sympathetic insight of President Butler, who was one of the first professors of education to realize the educational possibilities in the philosophy and practice of the kindergarten. In addition to this, no small credit should be given to the two remarkable women who were, in turn, directors of the Department of Kindergarten Education in its early history; first to Miss Angeline Brooks its founder, who celebrated with us her silver anniversary at our reunion in February, 1913; and to Miss Mary D. Runyan, who succeeded Miss Brooks, setting a stamp of culture which has been our birthright, and a standard which it has been our privilege to strive to maintain since her untimely death in 1905.

It has been a severe bit of discipline, and at the same time a rare privilege, to direct or teach in a kindergarten training school organically related to a large university where every department is manned with instructors holding varied points of view, and where each view must stand or fall on the values which can survive criticism, research, and investigation. It has been said that in modern life no movement commands respect

until it is investigated, so in time the Department of Kindergarten Education had to take its turn in being put on the rack of investigation—a most trying experience for any movement, but peculiarly so in the kindergarten with its proverbial devotion and loyalty to Froebel. The demand for a more critical attitude toward the theory and practice of the kindergarten, the department owes to the courage and wisdom of Dean Russell who realized the necessity for this if the kindergarten was to survive on merit rather than by tradition. In introductions to the two kindergarten numbers of the TEACHERS COLLEGE RECORD issued in 1903 and 1904,[1] he said, "Practice cannot be justified by tradition, or eccentricity excused on appeal to authority. There is no room in American education for blind adherence to a cult or unreasoning devotion to a master. . . . It is the obvious duty of a university kindergarten department, while holding fast to that which is generally accepted as necessary or desirable in kindergarten training, to subject every phase of its work to the keenest criticism and fearlessly to amend its theory and modify its practice in accordance with increasing knowledge and truer insight. The administration of such a department should aim to give each instructor and investigator a chance to do his best. The best results can not be secured if the teacher is restrained for fear of offending some one or because the policy of the institution is averse to ample investigation and free speech. . . . We should not be living up to our great opportunities if the attempt were not made to find differences of opinion and so far as in us lies to reconcile them. Agreement on all points would be surely indicative of mediocrity. Both in teaching and in the results, we welcome honest differences, and we invite criticism if thereby progress can be made." The Department has made a sincere effort to live up to this privilege and standard, giving each instructor freedom "to follow where the visions lead" if she was willing to put her theories to the test of demonstration with willingness to submit the experiments to the criticism of her co-workers and experts.

This atmosphere of freedom has inspired a number of ex-

[1] "Philosophy and Psychology of the Kindergarten" and "Kindergarten Education."

periments during the last decade especially along the line of better uses of kindergarten materials, the results of which we now submit to the public for criticism. In these we do not claim to have solved the problem for other people, or even for ourselves; but each experiment has been of great value to the instructor and her co-workers, in clearing our vision, in freeing ourselves from blind tradition, and in paving the way for other experiments.

In all of the experiments the following problems have been more or less prominently in mind: Among the apparently aimless and valueless spontaneous activities of the child is it possible to discover some which may be used as the point of departure for ends of recognized worth? Are there some of these crude expressions which, if properly directed, may develop into the beginnings of the fine and industrial arts? How far does the preservation of the individuality and freedom of the child demand self-initiated activities? Is it possible for the teacher to set problems or ends sufficiently childlike to fit in with the mode of growth and to inspire their adoption with the same fine enthusiasm which accompanies the self-initiated ones? Or, better still, if the activities and surroundings of the kindergarten were more like those in real life, would problems arise spontaneously out of these more lifelike situations as they do in life? In other words, this problem has been studied from initiation on the level of impulse and spontaneity to culmination in ideas embodied in good form.

In our effort to answer some of these questions experiments have indicated that the play motive when utilized in the production of toys has seemed to offer problems which the children immediately recognize as their own, thus meeting the standard of worth from the standpoint of the child and the teacher. With the older children it has made a very happy transition from the more-or-less haphazard and short-lived pursuit of ends which is characteristic of play pure and simple, to the voluntary persistence in solving more distant problems required in the beginnings of creative work and industry. Here the motive of the child is to meet his own play needs, but the process of production involves the recognition of a problem which to be solved

requires persistent experimental attempts to discover ways and means organically related to the end desired. The self-effort of the children is marked, and their attention unwavering. It might be described as the attitude and processes of creative work permeated with the spirit of play.

In this way the child's introduction to industry corresponds with that of the race, in that he is learning to produce through his own efforts the objects which promote the welfare of his social life. The dolls and doll families are of inestimable value, as the children voluntarily centre their productions around the needs of the doll families and communities. The needs of the dolls while "make believe" from our adult point of view, are to the children almost identical with those in real life—food, clothing, shelter, etc.; and the ways and means of supplying these in play-life offer the same motives and opportunities for creative work which they inspired under the grim and more pressing conditions in the race. The children became so absorbed in the reality of this motive that they voluntarily planned a series of occupations for themselves, not only for the day, but in some cases, for a week in advance.

At other times their own out-of-door play necessities have furnished the motive for the production of marbles, tops, kites, wagons, etc. Or, again, some real need in the kindergarten or the home has suggested the type of production; for example, making crude little work aprons to protect their clothes when modelling, painting, or when washing the kindergarten dishes.

In occupations of this nature, the teacher's problem is in guiding the children's productions through an ascending scale of difficulty which will insure continuous progress in technique or control over materials. While kindergartners of an early day were enslaved by a narrow conception and scheme of sequence which was utterly foreign to the nature of the child and to life, the ideal is an important one, and may easily be overlooked or undervalued. If a teacher recognizes the importance of a continuous advance in the mastery of technique and materials, she will find that if the children are thrown upon their own resources in discovering solutions for themselves they will probably produce a fairly good attempt, representing their maximum skill; or they

become conscious of their need for guidance or suggestion which offers her the opportunity for leading them to better ways and means, or to a more adequate form of expression.

These points have been kept in the foreground of our consciousness through one and all of the experiments, namely: that *there must be freedom somewhere*—ample room left for choices, and provisions made for the child to make his own judgments and decisions. For example, if the child initiates the "what" of his production, the teacher's part may be to hold herself in readiness to offer suggestions as to the "how," the best ways and means; or, if the teacher has suggested the problem, aim or end, she must throw the children on their own resources to discover ways of arriving at the end. It has often been quite evident that when the children are intelligent as to what end they are striving to accomplish, they are set free from any undue dependence on the teacher for either dictation or detail of direction. The problem to be solved, the end to be attained, dominates them, and the teacher falls into the background.

In 1905 an experimental kindergarten was opened in Speyer School in connection with the new branch of the Kindergarten Department—Kindergarten Supervision. Dr. John Angus MacVannel was then acting as head of the Department and two distinct lines of experiment were set in motion, the results of which are given in the articles in this number. With the exception of the opening article, which is a stenographic report of an address given by Dr. John Dewey to the Kindergarten Department at the Reunion last February, all of the articles in this number are the results of experiments made in the Department since 1905.

The article by Miss Julia Abbot was presented before the training teachers of the International Kindergarten Union. It was the result of a theory which Dr. MacVannel worked upon, and those coöperating in the experiment under his direction were Miss Grace Fulmer, Miss Kate McMahon, Miss Louise Sutherland, and Miss Julia Abbot, then in the Horace Mann Kindergarten. The papers by Miss Luella A. Palmer are largely the result of her three years' experimental work in the kindergarten

connected with the Speyer School, which served as a laboratory for the new branch established by Dean Russell for advanced students in kindergarten supervision. These papers have been presented by Miss Palmer before the International Kindergarten Union at its different meetings. The paper by Miss Grace L. Brown is the result of experimental work with both teachers and children in an effort to find both the type of occupations and the method of presentation which supply the best transition from play to free, creative work. Miss Charlotte Garrison, director of the Horace Mann Kindergarten, has coöperated with Miss Brown in the work with both teachers and children, and the students in kindergarten supervision have had the opportunity of watching the experiments of these instructors with the children in the Horace Mann Kindergarten.

It seemed a fitting thing to ask Dr. Dewey to present the opening article in this volume, as much of the work here presented, especially the articles by Miss Palmer, Miss Brown and Miss Smith, was inspired by study with him, and by the results of his study of the kindergarten in coöperation with Miss Anna E. Bryan in the kindergarten in the Experimental School affiliated with the University of Chicago. An account of the results of this experiment came out in the Kindergarten number of the *Elementary School Record* in 1900.

The Kindergarten Department of Teachers College was not only at liberty to study the kindergarten problem from the standpoint of experiment and investigation, but was under the necessity to do so, if the kindergarten was to be placed on the same basis as all other departments. While Froebel's materials and methods have been respectfully studied to find the best in them, the materials used have not been limited to these or in any way bound by them. Careful studies and experiments have been made with a variety of educational materials, including not only those of Froebel and Montessori, but any good toys and play materials, including those from nature and those of recognized merit in the field of the fine and industrial arts. The results of these experiments have been compared, and those materials selected, irrespective of tradition, which have proved of greatest worth.

Free use has been made of the doll and doll families as they seem to furnish one of the most natural motives to work and play with materials. In the simplest sense of the word the doll is the symbol of humanity, and as man and man's needs, aesthetic, domestic, and industrial have been the incentive to all good production in the domestic, fine, and industrial arts in society past and present, so the dolls which represent humanity in the play life of the child, have proved to be a most natural incentive to production. It seems strange that the doll has been so largely overlooked or undervalued in the kindergarten, when its necessity and importance in the play life in the home is as old as childhood and motherhood. Froebel, who was the first to see the educational value in other toys of universal significance—such as balls and blocks,—at one time seemed on the eve of recognizing the doll in his scheme of play materials. However, his own personal absorption in geometry and mathematical relations crowded it into the background, so that instead of being central in the play materials in the kindergarten, it has been an adjunct, an afterthought, or an occasional visitor. In one place, he seems to see the doll as the symbol of humanity in childlife, as he poetically refers to it as a "play child." Fortunately, it is not only a play child, but it is equally effective as a play mother, a play father, a play baby, symbolizing in turn all members of the human family.

It is interesting from the historical point of view to trace the first emphasis upon the educational value of the doll and other good toys, such as doll carriages, furniture, dishes, etc., to Frau Henrietta Schräder, who was not only trained by Froebel, but his grandniece. The younger children, especially, had daily use of these in her kindergarten, the Pestalozzi-Froebel Haus in Berlin, where they were recognized as educational material as far back as 1880, if not earlier. Miss Smith, in her paper, presents some of the educational uses of the doll family and the doll community with their social needs. Dr. Dewey's presentation of the conditions and processes of reasoning in his book "How we Think" has been of inestimable service in helping us to demonstrate the fact that children reason very much as adults, provided they have the conditions which provoke reason.

We have introduced some blocks, which are much larger than those of Froebel or Montessori, for use on the floor and in group work. These are related as far as being based upon a unit of measurement is considered. They provide boards—a long-felt need in the constructive materials of the kindergarten, with which the children can construct bridges, floors, and houses sufficiently large for the children to get in and play "Lady-come-to-see" or store to their heart's content.

It is sincerely believed that the time has come when all materials and methods must be carefully investigated and those selected which prove to be of actual worth in the development of the kindergarten child, whether they be those planned by Froebel, Montessori, or their followers, many of whom are striving to hold fast to that which is good, while pressing forward in the endless quest for the better—the best—the ideal.

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REASONING IN EARLY CHILDHOOD[1]

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When I seriously began to give my mind to the subject that was selected for me, I found nothing very special to say about the reasoning of early childhood. There is not any reasoning of early childhood which is different from the reasoning of later childhood, adolescence, or adults. There is reasoning in little children just as there may be in a grown up man or woman, but there is not reasoning of early childhood if you mean by that "of," something which as reasoning can be marked off definitely from reasoning somewhere else.

I have come to believe that reasoning itself, the capacity or ability to reason (or that bundle of minor abilities of which reasoning consists), is not capable of being improved with growing years, or, at least, its improvement is not sufficiently marked to be worth mentioning. Professor James in his Psychology, speaks in this way about organic memory—"the power to retain." Later investigations have led to some modification of his statement, but it is generally admitted that the power to improve radical or fundamental memory is slight. Unfortunately, however, the converse statement is not true. Retrogression is entirely possible, with both memory and reasoning. There is something for educators to do even if they cannot fundamentally improve the power of reasoning; their task is to furnish conditions so that this power can be kept together without a falling off of its pristine capacity. This is not a merely negative task although it is here stated in negative terms. The problem is to prevent the falling off or going backward, but accomplishing this prevention requires a great deal of positive activity in keeping the ability up to concert pitch.

[1] Stenographic report of paper presented before the Department of Kindergarten Education, Teachers College Alumni Conference, February 21, 1913.

Since the power of reasoning in little children does not differ fundamentally from that of adults, if we want to understand it in children we must study it in ourselves. There are of course differences in the concrete thoughts of children and adults, and these are differences in subject matter. These reduce to two heads, covering a variety of detail:

(1) There are different objects to think about, and different purposes for which to think, because children and grown-ups have different kinds of acts to perform—different lines of occupation, in short. The adult has obviously more complicated activities to carry on; he has concerns that continue over longer stretches of time so that more details enter in, and results are postponed. Hence he must be continually looking far ahead. The *process* of thinking is essentially the same for little children; but there is such a difference in the materials with which the thinking is done, and the ends or objects for the sake of which is carried on, that the impression is easily created that the thinking itself is of a radically different order.

(2) There is another difference between children and adults. The objects and ends of adults, because long continued, have a definitely established character, have a more specialized organization. The absence of a high degree of specialization in vocation and in particular duties among children, gives opportunity for a freer and more flexible play, a greater open-mindedness and greater susceptibility to new ideas than the average adult succeeds in retaining.

The process of thinking has been often explained. There are just three elements or constant conditions. (1) The end to be reached. (2) The selection of the means by which to arrive at it. (3) The possibility of new discoveries in working toward the end.

(1) If there is an end ahead to be reached there must be a forward movement, a certain span of time between the person and the object to be attained. It is significant that all of the words like "attaining" and "achieving" have the idea of a forward movement, and imply a certain distance between ourselves and something a little way ahead of us in time.

(2) For the sake of the something ahead that we want to

attain there must be a selecting and arranging of various means and materials which will enable us to reach that end. These words "selecting" and "arranging" have a mechanical sound. If we had a box of cut-up pieces of wood and all we had to do was to pick out some of these and put them together, the operation would be mechanical; but in thinking, this selecting and arranging are done for the sake of reaching an end—something ahead of us, something which we have not but are trying to get. Hence they cannot be of such a mechanical character as the words indicate. In other words, this selecting and arranging always involve something of *experiment,* relative to an element of uncertainty, and (what is more important) to the need and possibility of discovery.

(3) The selecting and arranging of means and materials, if there is an end ahead, is by the very nature of the case a tentative process, as much a process of experiment and discovery as the operations of a scientific man in his laboratory. It might appear to any one who entered a chemist's laboratory that he selected a pinch of this and a pinch of that and mixed them together much as a cook in the kitchen selects salt, and milk, and flour and beats them together. The latter may be a routine act, but where there is thinking, or intellectual experimenting, there is something new, something really distinct in the end to be reached, different from any prior experience. Unless there is something in some degree novel in the purpose or end, then there is no thinking, only a performance of a routine act, following a formula which has been given so that there shall be no possibility of doing the wrong thing. Only when the end to be reached is something ahead instead of something behind, something still to be done instead of something which has been accomplished, the selections and arrangements have intellectual quality. They represent an experiment of the mind and of the imagination. The zest and joy of discovery cling to them.

The ends which a young child has are different from those of the grown-up and the materials, means and habits which he is able to fall back upon are different, but the process—one involving these three factors—*is exactly the same.*

There is a difference in the psychological context which needs

to be mentioned because it is so important practically. Just because the child's ends are not so complex and not so remote in the future, the tendency to put every idea in immediate action is stronger with the child. His dramatic instinct or his play impulse is markedly more active, more urgent and intense. This creates the appearance of a great difference in the quality of the thinking itself, but it is a difference in the psychological landscape, as it were, rather than a difference in the actual process of thinking itself. The child's end is not far ahead and so the immediately physical and motor character of the selecting and arranging comes out more markedly. The physical elements and the tendency to adapt them to immediate use are present in grown people, but are disguised and translated by substitutes. Adults use words and other symbols as the media for selection and arrangement, but words are not dramatic enough for the thinking of the child in a great many situations. He wants to reach his end with his whole body instead of doing it with the muscles of the throat and tongue alone. Adults carry on a constant physical activity of a suppressed kind; to get a remote and far-reaching end, they employ minute and invisible kinds of expression. A child wants to bring into play in an active and overt way his hands and arms and legs.

While native rational power can hardly be improved to any great extent, if at all, it can easily be allowed to decrease. A child can be surrounded with conditions which cause the power to be dissipated and rendered ineffective. If a child is bright, the power can be drafted off in all kinds of futile and irrelevant ways which result in mind-wandering, inability to control the attention or center the mind on a topic around which the selecting and arranging of materials are to be carried on.

This dissipation may take place in three ways. (1) Plain frittering away of time. It is called frittering away of time or wasting time, but this is merely another phrase for fooling away intellectual energy. This comes from not having any purpose in view. "Amusing" in the worst sense of amusing, means that there is no *recreative* element, but only dissipation of energy. It is not enough to *catch* a child's attention; it must be *used*, and this implies an end. The mind should be carried on to some-

thing new. A lesson may be beautifully planned and given, but if the child does not get intellectually something he did not have before, he is frittering away his time. He may be wasting his mental capacity when he is doing things which seem to the teacher to be very important. Merely to manipulate materials may have no meaning to the child. The *teacher* may be getting some intellectual exercise, may be arriving somewhere or thinking, but unless there is an end in the child's own experience, then *for him* it is a case of frittering. To manipulate purely symbolic material of some sublime mathematical or spiritual truth, unless the child has some equivalent counterpart, is thus a case of frittering away energy. (2) Another thing which makes for retrogression is the amount of purely dictated work that the individual has to do. The measure of thinking in a child or adult is not in the repetition of the past, but in seeking for a future, not in following the old, but in reaching out for the new. Dictated work alone eliminates the attitude of searching, of reaching out, experimenting. Undoubtedly the best way to train animals, horses and dogs, to do their stunts is to assign a specific thing to be done, dictate it and give a reward when that particular thing is accomplished—and something else when it is not done. Children are animals too. It may be that physical habits are most readily formed by a process which is largely dictation; but it must be borne in mind that in the latter case, while the physical habit will have intellectual meaning to us, to the child it will be senseless, and hence his mental capacity may be reduced.

(3) The third thing which has a detrimental effect upon the child is presenting ready-made, finished formulae upon the basis of which he is to act. Since there should be reaching out for something new, the process of selecting and arranging materials should be more or less experimental and tentative, a process of trying this or that to see how it will work, then retaining the things that carry toward the end and dropping the other things. This process requires some spontaneity and leeway; and too definite and finished formulae are hostile to this freedom of personal experimentation. Conscientious teachers are prone perhaps to fail *here* more than at any other point. They want to

forestall all failures. They want to dig the little plant up by the roots to see that the roots are growing and growing in the right direction. It is quite safe to say that no two grown persons get the same result by the same method unless the situation is an exceedingly simple one. Sometime after you have had a complicated question on your mind, if you will ask yourself just how you reached a result, and go back and try to recall every step you took and misstep also, and then compare it with any formula that can be devised, you will see the difference between the consciously formulated method and the method unconsciously but vitally used. What is called thinking is very largely a series of intuitions. Something comes into the head—it sprouts. It does not come by any formula which was there before. We say "I think," but "I" do not, *it* thinks. There is something which is deeper than our *conscious* rule.

The orderly method is good but it comes as a *result* (often comparatively late). What might seem to a grown-up person to be disorder might seem to a child's mind, order, in the way he selects and arranges things. The mere fact that a certain order of thinking does not fall into the teacher's schedule of thinking means that a child is one person and the teacher another. Yet we imagine that there is just one right way to think and if another person does not get results in the same way that we do, we conclude that there is something wrong.

Perhaps the most difficult thing to get is intellectual sympathy and intellectual insight that will enable one to provide the conditions for another person's thinking and yet allow that other person to do his thinking in his own way and not according to some scheme which we have prepared in advance. This applies quite as much to the teaching of the elementary school subjects, such as arithmetic and grammar, as to the reflections of the adult discoverer. At present we often think that a child has no right to solve a problem or do a sum at all unless he goes through a certain form.

There is one point which has not been touched—the question of the materials appropriate for the thinking of young children. This matter cannot be easily anticipated or cleared up in advance of actual contact with actual children. But we may ask what

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ends occupy the attention of most children. They will be found to fall under two heads—(1) The very small child has as his chief end the adjusting of one of his physical organs to another. He has to learn what the lower animals have to start with. He has to work out by practical experimentation how to make his hand and eye work together, his ear and eyes work together, how to manage and manipulate physical materials by means of his own organs. Intellectual thinking accompanies this process of experimenting with physical activities so as to reach certain results. There is the question of an end to be reached, and this is cleared up by managing, manipulating, coördinating the operations of the senses and muscles. Here we have one of the great reasons, on the physiological side, for the success of the kindergarten movement. In various ways (whatever reasons may have been given for the process) it has secured a large opportunity for direct muscular adjusting, and for manipulation of various kinds of objects. If the young child has an end which he wants to reach and has sufficient freedom in choice and arrangement of materials *to work out for himself the end he is after,* there is sure to be a genuine keeping going of the thinking process.

(2) The other great problem for a little child is to get along with other people. He has the definite occupation of adjusting his conduct, in a real give and take of intercourse to that of others. He needs to make other people realities to himself, while he gets the power to make himself real to them. There is an adjustment of behavior which includes a good deal more than that of outward or muscular acts. The questions arising from the groupings of persons are the most perplexing problems of life even for grown up people; but for the children, the problem is especially acute owing to their dependence upon others and their inability to make their way physically and industrially.

Material selected then from situations of physical control and social adaptation (especially from the two in connection with one another) is most appropriate for the work of the teacher in maintaining the mental acuteness, flexibility, and open-mindedness, the dominant interest in the new and in reaching ahead that are at once such marked traits of the life of childhood and such essential factors of thinking.

THE DEVELOPMENT OF REASONING IN YOUNG CHILDREN

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[This article was the discussion of an address given by Dr. Dewey before the Department of Kindergarten Education at the Teachers College Alumni Conference for 1913.]

Problems in education have been concerned largely with the effort to devise means or methods by which children might be led to acquire a greater amount of knowledge and acquire it with greater ease and facility. The problem of to-day is rather how to provide conditions which will call out the greatest amount of initiative in children, which will most effectively develop reflective thought or reasoning.

This problem is a general one which should interest teachers of children of all ages although each will be especially concerned with that form of practice which seems to offer best opportunity for the development of reasoning in the particular children with whom he is dealing. The aim of this discussion is to treat the subject from the standpoint of the education of young children, those of so-called kindergarten and primary age. Before discussing any specific application, however, let us first consider the nature of the problem itself. How may reasoning be developed in children or what are the conditions essential to its growth?

Dr. Dewey has analyzed the process of reflective thinking in his "How We Think" and has there stated the conditions upon which its development depends. He says that the first essential in the reasoning process is that the individual have some end or aim in view,—an aim whose realization presents perplexities or difficulties, in other words, a problem to be solved.

At first glance this may seem to be a process somewhat remote from what might be expected of young children. But observation shows us that even an infant has problems of his own.

He desires to recover the ball that has slipped from his hand and rolled out of reach, and though to us its recovery would be so simple a matter that the word problem seems out of place in relation to it, yet to him that recovery is a matter of no small difficulty.

If reasoning, then, is a process that begins in infancy and one which every individual has daily and hourly need of performing, must we not assume that its development is one of the prime factors in the earlier periods of education?

In the traditional kindergarten and in the primary school other ends have taken precedence over that of the development of reasoning. Progressive kindergartners have perhaps taken the greater interest in work that demands initiative on the part of children.

In this paper some inferences may be drawn from several experiments that have been made with children in the Horace Mann kindergarten where the gift and occupation work was presented so as to involve simple, childlike problems, perplexities, or difficulties which demanded thinking in working out a solution. Some of the experiments are as follows:

(1) The problem was to make a chair or table, to build a house or bridge from a certain given material; that is, an end was set and the children worked out the means by experimenting with blocks, paper, sand, cloth or other material until they got a satisfactory result. (2) Again an end was set, but there were certain limitations, or certain units given; for example, an open window made of sixth gift bricks and a house made so as to include one or more of this given arrangement of blocks. (3) A model was presented—a barn made and shown—and the problem was to reproduce it. Often one child's work became the model for imitation. (4) The problem involved the selection of material to be used in making some object, such as a broom or a seed bag, or in building a house or a fence.

There was an interest for children as well as a value in this form of play, which prescribed or dictated work cannot have. The number of very good ways of making things that children discover is surprising and the variety of forms adds greatly to

the interest. Children get suggestions from each other's work of further possibilities which they may carry out.

Excellent as this work is, when we come to study deeper into what is involved in the development of reasoning, we find that several of the factors that seem essential to good thinking are lacking. In the first place, the problems are somewhat artificial, that is, they are largely suggested by the teacher. *There is no situation out of which needs naturally arise as they do in life* and become to children ends and purposes which they make their own and which challenge them to overcome difficulties or perplexities in order to attain them.

But we may ask what is the nature of a situation out of which needs would arise and how may we create such a situation in a schoolroom? As we observe children in their spontaneous play we find that dolls and other toys suggest a social or life situation and that in relation to them there are needs to be satisfied. Given dolls, children feel the need of clothes, of houses, of furniture, wagons, trains, stations, and so forth.

In play in a kindergarten such needs would continually arise as children's ideas developed under guidance and their technique improved. Primary children in the execution of their aims or purposes would demand more detailed and exact representations which would include reproductions of more complex phases of social life and of the processes necessary to its perpetuation. Under such conditions reading, writing, and arithmetic would become the necessary means by which these ends could be more adequately realized and they would not be looked upon by children as just school studies that seemed to have little or no relation to use in life.

To children, dolls stand for human beings, so that in constructive work for them, children are carrying out play purposes which aim to satisfy human need. The achievements of modern civilization are the result of a similar effort in the race. Mankind may be said to have developed intelligence or reasoning power through the attempt to satisfy ever more adequately human needs and desires. When we provide children with conditions for play of this character we are giving them an opportunity to develop in a way analogous to that through which the

race attained its development. We are giving them real experiences, permitting them to discover their own ends and work out the means for attaining them.

The criticism has been made regarding the subject matter of school studies that it represents material that has been abstracted from experience, logically arranged, organized from an adult point of view and presented ready-made to children. The same criticism may be made of the practice in the traditional kindergarten. Though here such things as chairs, tables, houses, bridges, and so forth, have been abstracted from social life where they have meaning and significance, and have been arranged by an adult mind in the form of sequences to be given to children by dictation. The method of presenting work as a problem is a significant step in advance, yet here do we not still have the object generally isolated from social life or need? Though the bridge is worked out by the children themselves it does not come to them as a necessity in a situation, and is not used in any way when completed. Its construction is presented merely as a end in itself.

An effort has been made to give purpose to children's work by relating it to the needs of the one kindergarten doll. Each child makes the desired object, but the work of only one child is kept for the doll while the rest take theirs home. There is here an idea of purpose and need yet the work of only one child fulfills the need.

In this article no reference is made to that form of play where children are merely handling objects, when they are experimenting with materials, finding out their possibilities. The value of this is taken for granted at that stage of development when it is needed.

In the first place, then, the problems here considered do not represent the maximum amount of thinking because the ends or purposes are not real purposes in the sense that they originate from the children themselves, and they do not appear as needs in a social situation.

In the second place, problems related to the construction of isolated objects often fail because there is no evident means for testing the result when it is attained. Dr. Dewey says the im-

portant thing is that every inference or suggestion of a possible solution shall be a tested inference. As the problem of constructing these objects does not arise from any felt need for a solution, the purpose in construction must necessarily be merely to reproduce, on a small scale, objects of adult use in so far as the material and experience of the children will permit. The aim is to make a chair or table, or to build a bridge that will resemble these objects that in social life meet a need. But how may it be determined whether the results are good representations or not? At least it can be only a matter of opinion or of the authority of the teacher.

An essential feature in training children in reflective thinking is, as Dr. Dewey says, the cultivation of habits of discrimination between results that are tested and those that rest on mere assertion or opinion. In relation to such materials as dolls, doll houses and toy animals where activity is guided by a purpose the test is, as it is in life,—*does the result serve the purpose?* Some years ago in Louisville, Kentucky, Professor Patty S. Hill, now director of this department, began this type of experiment with dolls, but frequently one doll only was available, as a means of testing the children's work. Now we would ask that each child have a doll of his own so that in a more adequate sense he may initiate his own purposes or ends and test his results.

Another essential point in this training is the development of habits of suspended judgment. While suggestions or results are not necessarily immediately accepted where we have construction of the isolated object, it is nevertheless true, I believe, that suggestions will be more carefully weighed if the result must stand the test of use; judgment of it, at least, must be suspended until the test has been made.

It may be truly said that a little child makes no distinction between means and ends as he plays. However, even though he is not conscious of the distinction, he is laying the foundation of habits of thought and action so that the form of his early play has as much influence in his development as what later is called work where there is a clear consciousness of means as the process through which ends are attained.

We may perhaps clear up the whole problem by examining

a few practical illustrations which seem to introduce the conditions that develop reflective thinking. Let us imagine the dolls as having moved to the country and the children, as farmers, having shelled some real corn and threshed some wheat. The problem naturally arises, what shall they do with it until they are ready to take it to the mill to be ground? Each must build a bin in which to store it. The result of his work will be proved when he pours in his corn and wheat. Did he make it large enough and strong enough? Did he provide for keeping the corn and wheat separated?

Where we have the building of a bin presented as an isolated problem without some way of testing there is no means of judging the value of results. We can resort only to opinion or authority. The teacher may explain that one with a partition would keep the corn and wheat from mixing and that it would take less room and fewer blocks than two. But even if children could realize the fact, without the experiment in testing—which is doubtful,—the process of reasoning is not complete.

To the children who have a social situation before them, other problems are arising—the construction of a mill, the making of bags of some kind to hold the real flour and meal which goes back in the farmers' wagons in place of the wheat and corn. If the mill is on the other side of a river, chalked on the floor, there is a new difficulty—a bridge must be built.

Contrast the problem of bridge building in this situation with that where the teacher presents the problem of building bridges with certain material on the tables without any relation to a social situation out of which it might arise. The children have a purpose which is their own and the result of their work is judged, tested by its adaptation to this purpose, not by its resemblance to a general idea of what a bridge used in adult life might be, a vague and indefinite thing, but by the fact that children could get their wagons from one side of the river to the other by means of it. With the large floor blocks used in the Horace Mann kindergarten the bridge may be built large enough and strong enough for the children to walk over drawing their wagons or carrying their dolls.

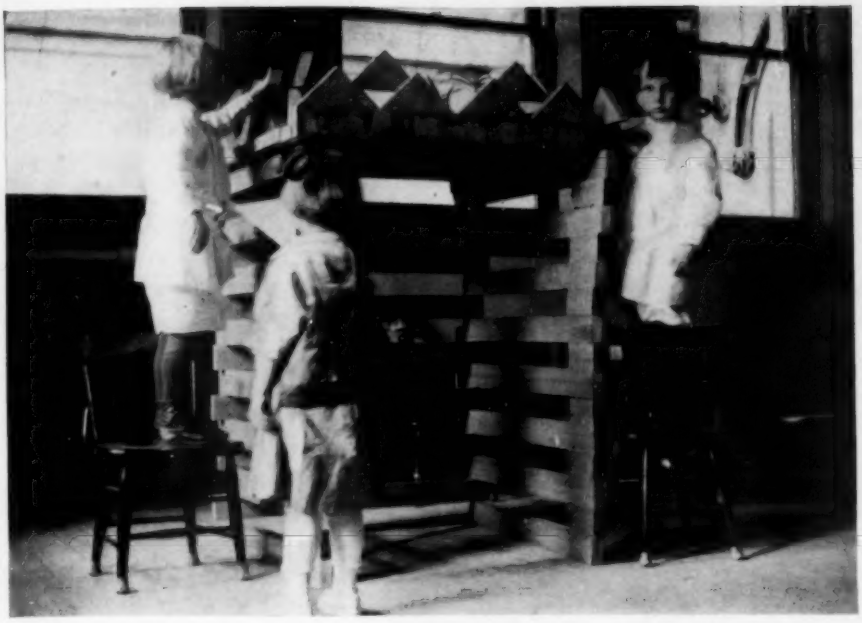
Toy farm animals offer suggestions of wonderful play possi-

bilities. The possession of a toy cow creates in the play world needs and responsibilities much as it does in life. Barns must be built, fences constructed and bottles of milk (cylindrical heads) carried from the country to those who live in the city and cannot have cows of their own.

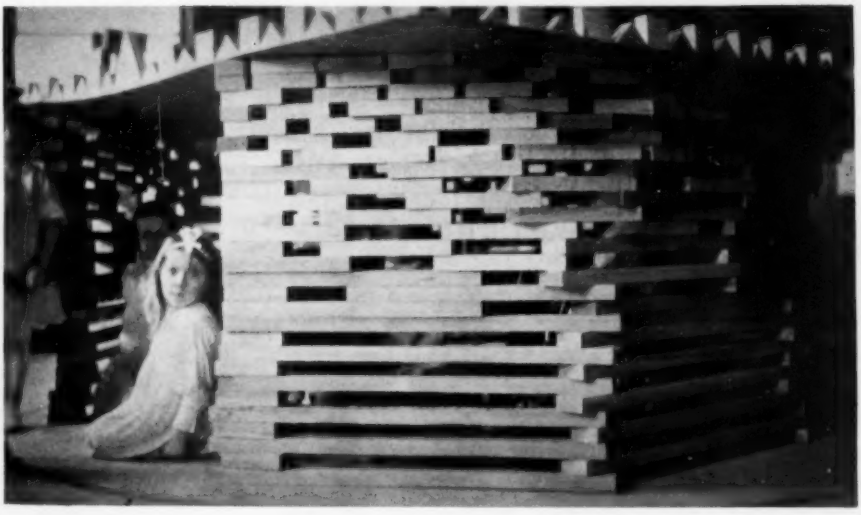
If there are sheep they must be cared for. The wool prepared for shipping, freight cars built to carry it in and wagons made to haul the wool from the cars to the factory. The factory takes in wool and turns out cloth to make the dolls' clothes, just as corn and wheat go into the mill and meal and flour are given out. This is as much of the experience as kindergarten children will understand. Primary children would work it out more in detail and gain an understanding of the process, the primitive process, by which wool is made into cloth or corn ground to make meal.

Some interesting results have been gained in certain primary grades where the work has been made to center about primitive industries. But here the same criticism might be made, that they are treated as ends in themselves. Older children would be interested in the life of the people and the stages of their development in relation to their expanding industries, but this seems too remote from the interests of children of six or seven years. In play of the character we have been discussing, primitive industries would become the means by which children could more completely realize their own ends.

Another need which is sure to arise at some time, creating a new aspect of social life, is that of stores of different kinds. When actual things are to be put in and sold—colored beads large and small for vegetables in the grocery store, clay bread, cakes, etc., in the bakery, real cloth, ribbons, patterns and thread for making dolls' clothes in the dry goods store—children build with a purpose and end in view. They construct counters and shelves, not merely because stores they have seen are supplied with these things; they build them for the same reason that in adult life they were primarily built—to display and store goods and provisions. When complete, the store is tested by its general usefulness and convenience to customers. Here we have children prompted to action by the same motives and needs (real



BUILDING WITH LARGE FLOOR BLOCKS—PLAYHOUSE



PLAYING IN HOUSE MADE OF LARGE FLOOR BLOCKS

for the time) in the same sort of situations that prompted the race towards its development. With Professor Hill's floor blocks children may build their stores large enough for one to stand behind the counter and others to come in and buy.

In relation to a discussion of reasoning in children it may be interesting to make some comparisons with the Montessori materials and their use. Dr. Montessori claims for her didactic material that it is self-corrective. But in life the correction of activity does not lie in the nature of the material as such, but in whether you accomplish your purpose with it. In testing a project that aims to meet a social need, it is equally self-evident whether you have succeeded in securing a satisfactory result. But here the child's judgment is called into play to make the decision and we have what corresponds more nearly to conditions in life.

There is a valuable suggestion for us in the spirit of freedom which it is claimed prevails in the Montessori schools, in the liberty given the children to select the material that they wish to work with. But where we allow the same freedom of choice of material, as is demanded in this socialized play, we find this radical difference: in the Montessori schools there is nothing to guide children in the selection of materials save their own present inclination, whereas in the face of a problem motive guides the choice. In the latter case selection is made after reflection of a kind that is fundamental in life and is itself the solution of a problem tested by the adaptation of the material chosen to the purpose for which it was taken.

As this form of play has as much influence in the physical and moral training of children as it has on their mental development, this discussion would be incomplete without some mention of these aspects. We all acknowledge that it is not right from the physical standpoint that a child with his growing, active, restless body should be kept seated for the length of time demanded in the majority of our schools, especially as desks and also kindergarten chairs are too frequently unsuited to their stature. It is free play on the floor, or at the table, as occasion for each child demands, with continual change of position, lifting and carrying things from one place to another, that affords

the most natural, healthful activity for young children, provided, of course, that the floors are clean and free from draughts.

In the race, moral conceptions have grown out of human association and relationship. Because we have eliminated from our schools the only condition that would give opportunity for a natural moral training—that of free social intercourse—we have had to resort to the unpsychological method of attempting to develop the child's moral nature by the introduction of another subject of study—the study of ethics. Where children are freely playing and working together, where they are sharing with each other, coöperating and assisting each other, we have opportunity for the only kind of moral training that is really effective.

In play with dolls we have another phase of ethical influence. One example may perhaps make this more clear. At one time when a group of kindergarten children were playing with their dolls a number of them laid the dresses just taken off on the floor. After some remark about teaching children to take care of their clothes I noticed a child quickly pick up his doll's dress and say to himself, "I'm not going to teach my little girl to throw her things on the floor." The interesting thing about it was that teaching his little girl meant doing it himself, for it did not seem to occur to him to make any pretense of playing the doll was picking them up.

The finer traits of character in the race have developed in home and family relationships, through a feeling of responsibility for the care and proper training of another, a weaker and more undeveloped human life. And though to the child in play this other is only a doll he is nevertheless developing his character in his relationship to it. He is forming in himself right habits and attitudes, not just for the sake of developing right habits or to meet his parents' or teacher's demands, or simply to gain their approval. His motive is that he may, by certain conduct of his own, care for and help to hold another up to what he recognizes as the social ideal. In a subtle play way he is overcoming his own personal inclination for the sake of another's good.

To some this may seem too fine a point, but is it not true,

though this is what *we* would call play, that there is a strong element of reality in it to children? In such absorbing occupation they are really living. Dolls are to them other people. And if it be true that children become like what they imitate, we must believe that character will be influenced and modified for the better in this reproduction of human life through play.

Work of this character will mean a very radical change in kindergarten and primary grades. Yet if we would provide for children the conditions now being recognized as essential to their fullest growth and development, if we would allow them the inalienable right of every human being, the right to develop his own individuality, under guidance to be sure, a very radical change is necessary. It is the recognition of the fact that power to reason is greater than ability to retain knowledge, that absorption in what one is doing is of more value than ability to hold to a task under compulsion, that is, pointing out the direction that reform will take.

THE PLAY MOTIVE AND EXPERIMENTAL METHOD IN KINDERGARTEN OCCUPATIONS

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It is the purpose of this article (1) to trace briefly the influences which have brought about the marked changes which we see in kindergarten occupations, (2) to present the viewpoint which has grown out of these influences, (3) to show the application of this viewpoint to the beginnings of industrial arts or occupations.

The principles here presented are equally valid in the beginnings of fine arts, but this article shows their application to the one type of occupations.

The term industrial arts or occupations is used not because the hand work of kindergarten and primary children can in any sense be classed as an industrial product, but because through these crude beginnings can be traced the early experiences in shaping materials to fit some individual idea or need, which make the finished product of later years possible. The crude pottery, weapons, and personal decorations of primitive people at first glance seem to have little relation to the arts of the present day, but we have the products of the ages which lie between to prove that the last could not be a reality without the first and all the intervening steps. This interpretation gives the entire field of hand work with children a broader and deeper significance and makes it possible for us to be very patient with the slowness of their progress and the crudeness of the product.

I

Probably the force which has been most constant and effective in bringing about changes in the occupations and other materials of the kindergarten is that furnished by genetic psychology and child study. Froebel has been called the father of child study, and in the sense that he gave the impetus to the

movement, and directed attention to the need of studying young children in order intelligently to guide them, the statement is true. But we should not look to the occupations or so-called "schools of work" of his followers for an illustration of Froebel's knowledge and comprehension of the nature and capacities of little children, for perhaps nowhere in his elaborate scheme of materials is there less fitness.

This incongruity was recognized years ago by many kindergarten teachers who were not highly trained scientifically, and the process of elimination and modification began long before the physician, the physiologist and the psychologist began their attacks. When these scientists did turn their attention to procedure in the education of little children, it was the occupations of the kindergarten which drew their first and most severe criticisms. The close application and fine muscular coöordination required by such occupations as pricking, fine card sewing, fine weaving and intricate folding were shown to be most harmful. These hygienic considerations resulted in a further modification, elimination and substitution.

As the connection between the kindergarten and the elementary school became closer and more universal, each department responded in some measure to the influence of the other. Examples of this reaction in the kindergarten are,—the criticism of the occupations by art teachers, from the standpoint of form, color and technique, resulting in a number of needed changes such as the use of better color; and the influence of manual training resulting in the introduction of built-up or constructive occupations.

Together, the kindergarten and the elementary school have moved away from a logical order of developing subject matter and materials, toward a psychological order. This tendency shows itself in the kindergarten in a departure from the old idea of sequence in material which was without meaning and purpose to the child, to the conception of a sequence of expanding and developing ideas and purposes, the material being merely a medium through which thought is expressed as is language. Closely related to this is the present tendency to emphasize the importance of motive in all school activities. A

genuine childish purpose not only gives impetus to any given effort, but also is a factor in its guidance and control. This has led to the elimination of such occupations as card sewing, paper weaving and sequences of folding and cutting, as not providing sufficient motive, and the substitution of other materials and projects which seem better to meet the needs of the children.

II

Value of Manual Expression. It is the instinctive tendency of children to carry all impressions over into some form of motor expression. This is especially true at the kindergarten-primary age when hand work has an equal value with conversation and play as a means of expressing, organizing, and clarifying ideas. Material is at first a stimulus to thought, and then a means of expressing and clarifying thought, as is shown in the following illustration. An experimental fold or two of a piece of paper develops unconsciously into a form which suggests a boat; then according to the child's knowledge of boats, a smoke stack is added, or a sail. The idea grew out of a form which, though stumbled upon, resembled and called up images of a boat, and so stimulated the desire to make the boat more complete. In some such way as this there is a continuous interplay between expanding ideas, and more and more complete realization of them. The relation of conversation, play and materials is very intimate, and with proper encouragement the three will develop together and be mutually helpful to each other.

Materials. In selecting materials two qualifications are necessary, first, that they shall be sufficiently large to preclude in their use the possibility of muscular or nervous strain; and, second, that they shall possess reasonable adaptability in unskilled hands. The field of choice is larger than the traditions of the kindergarten have led us to think possible, and if we stop to consider what children use outside of school for this type of work, in the home and out-of-doors, it will give us a basis for selection. They try out anything which is at hand, but we most frequently find them using paper and paste, cardboard, boxes of all kinds, cloth, needle and thread, string, wood and nails. If the school employs similar materials and wisely

directs their use, valuable connections are set up between home life, play life, and school life.

Purpose or Motive. A child's use of materials is very soon characterized by some motive or purpose which may be the merest thread of spontaneous unrelated incidents, or a definite aim set by the demands of his play life or his simple social environment.

With the youngest children the mastery of the material is in itself a problem. As ideas grow out of the using, and in their turn suggest other uses, there is a growing definiteness which is the beginning of purpose. With the oldest children there is a definite need of motive, if interest and effort are to be sustained and carried forward to a higher plane. This motive, whether set up by the child himself or by the teacher, must be of real value in the child's eyes. "The child is interested in objects simply from the standpoint of the part they play in his life, their use, their function, their purpose or service."[1]

If we watch children of all ages in their undirected use of materials at home and out of doors, we find they are either experimenting, discovering what they can do with them, or working with a purpose, making something definite. A little child with hammer, nails and board is quite content to drive nails; but an older boy wants to see his material take form as the result of his effort, and makes a boat, cart or house.

We should not overlook the fact that children often express spontaneously through material an immediate or temporary interest aroused by something seen or heard, or by what someone else has done or suggested. The point of departure may be the weather, a ride on boat or trolley car, or the passing of a parade or fire engine. It is of just such fragmentary incidents that life experiences are built, so it is well to use them as they come up, but not emphasize out of proportion to their value.

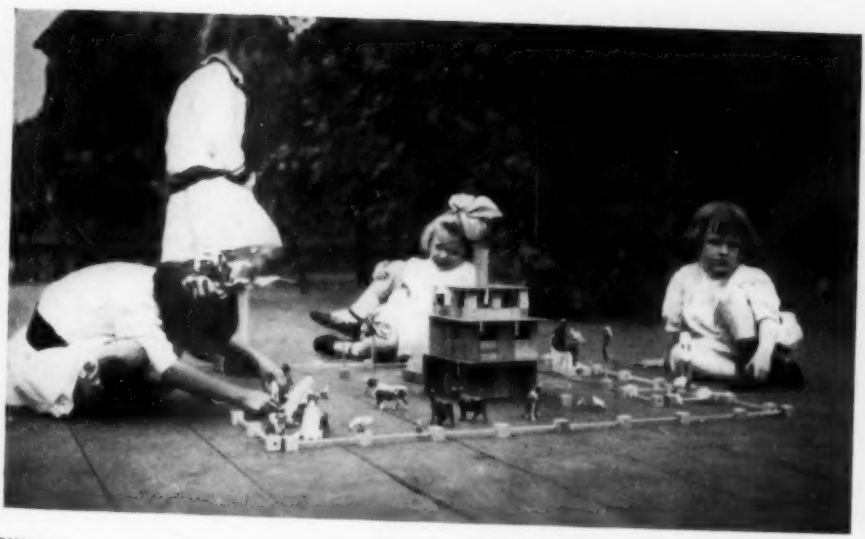
Method. With little children method in the use of materials has to do with the question of how best to present them so as

[1] Dewey, Imagination and Expression. An address given before the Western Drawing Teachers' Association, a report of which was printed in *Kindergarten Magazine*, Sept., 1896.

to secure a growing intelligence and control in their use. The experimental method judiciously used seems most nearly to fulfil the requirements, as affording an opportunity for interaction between the child, the teacher, and the materials. It creates an attitude of open-mindedness to suggestion from all sources, and gives the best opportunity for individual expression, originality, and mastery of material. By the experimental method is meant the way in which man has always approached any new situation, reading its meaning from the superficial signs at first, and according to his own experiences, then trying it out and turning to every source at hand for new light, until he knows both its possibilities and significance, and can use the results to serve his needs.

Applied to the use of materials with children, the method begins with simple experimentation aided by spontaneous imitation, or suggestion, if needed. This gives an opportunity to become familiar with some of the possibilities and limitations of the material, and gives a feeling of independence and freedom, which is lost if the first uses are more restricted and formal. We should do all in our power to keep the little child's faith in his ability to do anything, to conquer worlds, for in that fearless state he gains much knowledge and skill, and acquires the invaluable habit of attacking each new problem unafraid. Later comes a period when he tends to lose this self-confidence.

When the stage is reached where a definite purpose has arisen, the skillful teacher gives a large amount of freedom and opportunity for choice and individuality in the details of the work. Experience has shown that children are capable of selecting problems which are well worth while, if they are encouraged to do so, and are confident that their suggestions will be treated with respect. This in the child can be readily understood by the adult, who knows so well the stimulating effect of opportunity combined with the faith of others in his ability. If the work in hand suggests to the children future possibilities for the use of a given material, or if some need arises in play or work which they think they can supply, teacher and children can talk the matter over for the purpose of selecting the best ideas, and the best means of carrying them out. In this way children will



BUILDING WITH LARGE FROEBELIAN MATERIAL. MOTIVE—NEEDS OF DOLLS AND ANIMALS

often plan a sequence of work far ahead, and with considerable detail. The teacher from her point of vantage as student of child and materials, may see many a possibility which would not suggest itself to the children. She may know a better process, a more suitable material, a more skillful way of handling the tools, but before making the suggestion let her ask herself the question—Will this appeal to the child as his own, and is it suited to his stage of development?

Technique. The technique of little children is, at its best, crude, and their work is characterized by lack of proportion. These defects are largely due (1) to a lack of muscular coördination, (2) limited or no knowledge of the possibilities of materials, (3) the incompleteness of their ideas, and (4) the degree of their interest in the doing rather than the product.

Little technical skill is acquired at first but the children are learning the fundamental inherent qualities peculiar to each material, which was also the first step with primitive people. Imitation plays a large part here as they are quick to gather suggestions from all sides, unconsciously selecting and adopting as their own other ways of doing. This is one of the reasons why it is a mistake for the teacher to plan the details of the work too carefully.

With the growth of more purposeful work comes the increasing realization of a need of better form, and such realization is best secured as in real life, by submitting the object made to the test of use. The marbles must be round and smooth to roll well, the marble bag must be sewed so as to leave no gaps, and the draw string must be secure and yet work freely. With experiences of this kind, technique and proportion begin to improve without special emphasis, because the worth of such standards is appreciated by children. Dr. Dewey says, "If one is thoroughly interested in the idea as something to be expressed he must on this account be interested in the mode of expression. An insufficient interest in the form or process always marks something crude, hazy or unreal in the grasp of the idea or content. We must be interested in the expression just in proportion to the intensity, the controlling character of our interest in the idea. But, on the other hand, this interest in

the idea, in the story to be told, the thought to be realized, is the only basis for an artistic interest in the technique. A mode of expression separated from something to express is empty and artificial; it is barren and benumbing."[2]

In a desire to *see* the children progress more rapidly, to get better, more artistic results, it is so easy to over-emphasize technique, and forget that "the product of a child's work is not an end in itself, but a means of growth." Professor Sargent says, "The shaping of easily handled material till manual expression becomes a matter of course is accomplished most satisfactorily when there is little criticism of results and when technical instruction is only incidental."[3]

The relation between the fine and the industrial arts is very close, for there is so much of real art feeling and expression in the way in which a project is carried out. There is the question of good proportion, and the selection of color and decoration, all factors in technique, and having their beginnings in the kindergarten.

III

At this period the play motive gives the greatest impetus to construction, whether it be merely the desire to play or experiment with material, or to make something which can be played with. The value of the product is, as a rule, temporary, but it meets a need, serves a purpose as nothing else can, and supplements the permanent plaything.

In the free use of all play materials children will make the same thing over and over, not repeating in exactly the same way, but with variations, added details, and increasing control. They also return again and again to the carrying out of a purpose which seems to them worth while. This suggests the value in directed work, of repetition at frequent or longer intervals, or where a series of projects makes up the whole, carrying it on from day to day while interest is at its height. In the use of all materials reasonable care and economy should be taught, but there should not be any limitation which would hamper the development of a legitimate purpose. The younger

[2] Dewey, Imagination and Expression.
[3] Sargent, Fine and Industrial Arts in Elementary Schools, p. 32.

children use less variety of material in their work, but there should be a generous supply of what is needed that they may have ample opportunity to experiment. The few tools required should be of the best, for how can unskilled hands gain control over them and over materials, if the implements are so poor as to be almost useless even in the hands of a skilled worker?

Clay. The use of clay tends naturally in two directions, toward fine art and toward industrial art, but only the latter will be considered here.

The first pinching off, rolling and patting by the younger children soon gives place to activity directed toward a purposeful end, by a suggestion from some child or the teacher. Loaves of bread, cookies and cakes will take form so rapidly that soon there will be an ample stock for several bakers' shops, and in the play which follows an unconscious emphasis will be put on characteristic form and originality. This particular play may be carried on for several lessons, or it may be superseded by a fruit and vegetable store, or the making of dishes for a tea party.

These same problems and others can be worked out by the older children but with a more definite purpose and greater attention to detail and artistic form. Sets of dishes can be made for the dolls, strings of beads for both dolls and children, small bowls to hold the seeds gathered, and marbles with the coming of spring. Of course, these things are breakable unless it is possible to have them fired, but that does not greatly lessen their value.

The interest in marbles is enhanced by painting them with water color paints after the clay has dried, and coating them with a thin covering of white shellac to give a gloss; and the beads (which are strung with a needle and string while moist) can be made very attractive by variations of form or color. The application of the simplest form of decoration to the larger dishes made by the oldest children is one of the possible beginnings of applied design; bands of dots or dashes are effective and easily done, but lines require too great muscular control.

Paper. There is probably no material which offers more possibilities for hand work than paper, but much of the success

of the general construction work suggested depends upon the quality of the paper, its toughness and pliability. When cardboard is used, it should be what is called "flexible cardboard," which does not crack where it is folded, and yet is light enough for older children to cut.

The first uses of paper very soon develop into the making of furniture, which may be given added interest and impetus by the introduction of paper dolls, for a doll sitting in a chair most naturally suggests a table, plates for dinner, and many other possibilities. Scissors should be where the children can get them as they are needed. The first tables, chairs, and beds will probably be without legs, possessing only one or two characteristics essential for the use of each article; but with repetition of the work and growth of purpose, the need of the details will be seen, and they will be added little by little. At a later period when this phase of the work is again taken up with the same children, a cardboard house of good size and a family of paper dolls may be used, and all the group can help in the furnishing.

There are many incidental uses which will come up and prove of temporary value, but work which centers around home life and community activities will be of special interest and worth. Older children can make single rooms of cardboard and furnish them quite completely, and the working out of a miniature community in the sand table or on the floor calls forth much ingenuity in constructing houses, stores and other needed buildings, together with wagons, fences, etc. Boxes and baskets can be made for a variety of purposes, and here again the constructive work supplies a motive for decoration.

The coming of spring suggests a number of ideas which can be successfully carried out. Crude kites, fans, and pinwheels can be made, and it is possible to add to the attractiveness of all of these by means of a decorative border or all over design. Simple hats for dolls and children are easily fashioned, beginning with those for dolls in order to give opportunity for experimentation as to the best shape, size, and trimming. Those for the children are modeled after the best of the small ones, and are used when working or playing out of doors. For the warm days a

simple sunbonnet and parasol may be made, cambric and cardboard serving for these, with a dowel stick for the handle of the parasol. They are developed in the same manner as the hat except that the plans are worked out with paper first, and when a satisfactory plan has been decided upon, it is used as a pattern for cutting the material.

The paper dolls which are such a stimulus to the young children in their use of materials, are cut out of wrapping paper in large numbers by the teacher, so that each child may have several if needed. It is not necessary to spend much time making these, for even if crude and all alike, they fulfill their mission. The dressing of the regular paper doll by the older children can be introduced at the time the house or room is being furnished and needs an occupant, or in the spring when all are interested in new clothes. A foundation pattern for dress and hat can be worked out, and from that a spring wardrobe may be fashioned.

A good supply of boxes and ribbon bolts of all sizes is a fruitful source of suggestion and furnishes much play material. Large boxes can be converted into houses and stores, and smaller ones into beds, cradles, wagons, etc., while ribbon bolts make good drums, churns, wash tubs, and other objects of cylindrical form.

Wood. The general use of wood in kindergarten and primary has not been possible for a number of reasons,—the cost of material and tools, large classes and crowded rooms, and, on the part of the teacher, lack of knowledge of the possibilities and lack of skill in handling.

Much of the success in using depends on having the right material and tools. Only the softest wood should be used, such as white pine and basswood; the hammers should be heavy enough so that the weight will help drive the nail, and yet not overtire the muscles of the arm; and the wire nails should have large flat heads, sharp points, and be of a size not to bend under the first inaccurate blow or two. If the teacher understands the use of tools, she can easily train a few or all of the oldest children to use a small hack-saw and bench-hook with ease and safety, and they can do all the necessary cutting of small pieces;

but, for the long cuts, it will be necessary to use the regulation saw which is not safe in the hands of children on account of its size and flexibility.

To make it possible for children to help plan some of the dimensions and prepare the material, it is well to order the wood in long pieces of the needed width and thickness, but none of the wood should be less than one quarter of an inch thick, on account of splitting. Where it is possible, the best means of introducing the use of wood is through a large box of odd pieces from a planing mill or carpenter's shop. This not only gives material for experimentation, but supplies many odd pieces when the more purposeful work begins. The younger children do little more than play with it, and learn to handle hammer and nails, but the older ones can make furniture for the large doll or the doll's house, the loom needed for weaving the rugs, also window boxes for starting seeds, and simple trellises for climbing plants. When it is desired to color the finished article a stain or dye is more satisfactory than paint.

Textiles. This term is used in order to conform to the general classification according to materials rather than processes, and under this head sewing and weaving will be presented.

The process of sewing is interesting to all children, but its possibilities in kindergarten are restricted by the fine muscular coördinations it ordinarily demands. Whenever it is used the materials should be coarse, in order to insure so far as possible large, crude work. A box of scraps of cloth and a small doll for each child offer an excellent opportunity for experimentation. Often the accidental shape of the piece selected suggests a garment, and at first only such cutting or rough shaping is done as the children feel is required. These rudimentary garments are sewed on the dolls by means of a few large inexact stitches. Gradually consciousness of better shape develops and very simple two-seam dress patterns are worked out in paper. These dresses are no longer sewed on the dolls, but are made so they can be put on and taken off.

Winter weather suggests the need of blankets for the dolls' beds and cradles, and the ends of these may be overcast with worsted.

With marble-time and marble-making comes the need of marble bags. Made of coarse net, these are very attractive when sewed together with bright worsted, either by overcasting or with a running stitch. Putting in the draw-string is a new problem because it must be set far enough from the edge to be secure, and in order to draw easily the stitches must be coarse and no double stitch must be taken.

For certain activities, such as work with clay, painting, cooking and washing doll clothes, there is a genuine need of little work-aprons. Cheap muslin is good for these. The children may be given oblong pieces of cloth of suitable size, and broad tape sufficient for neckbands and tie-strings; these tapes are measured, cut, and adjusted by trying on themselves or on each other, and the only sewing required is to attach the strings and bands to the aprons.

As in the case of sewing, it is questionable whether much weaving should be attempted in the kindergarten on account of the prolonged effort which most projects require, and also because the nature of weaving is such that execution must be much more accurate than is required in the processes previously discussed.

This work should be limited to the oldest class. With them large material, such as cotton roving, wide strips of cloth or felt, and the heaviest worsted, may be safely employed, and where strength is important macrame or seine cord can be used for the warp.

Rugs for the doll's house offer a simple form for the introduction of weaving. Separate strands of woof should be used in the beginning rather than a continuous one which is always difficult to manage. The children not only make their own looms, but set up the warp with little difficulty. Hammocks also should be woven with separate strands, the ends forming fringe at the sides.

On special cardboard looms, caps, hoods and muffs for large dolls can be very satisfactorily made. The worsted is threaded into a bodkin, and as joining is easily concealed comparatively short threads can be used.

THE USE OF MATERIALS IN THE KINDERGARTEN[1]

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It is the object of this paper to furnish an illustration of "The Method of Using Materials in the Kindergarten." This method has been developed at Teachers College with the students in the Training Class, and with the children in the kindergarten, the nature of the development differing only in the greater or less maturity of the group. The same principles are applied to all the materials of the kindergarten, Songs, Games, Stories, Conversation, Gifts and Occupations, and to their arrangement in the kindergarten program, but in this paper these principles are developed in relation to Occupation Material. The general nature of the use of any material is given by Dr. MacVannel as follows:[2]

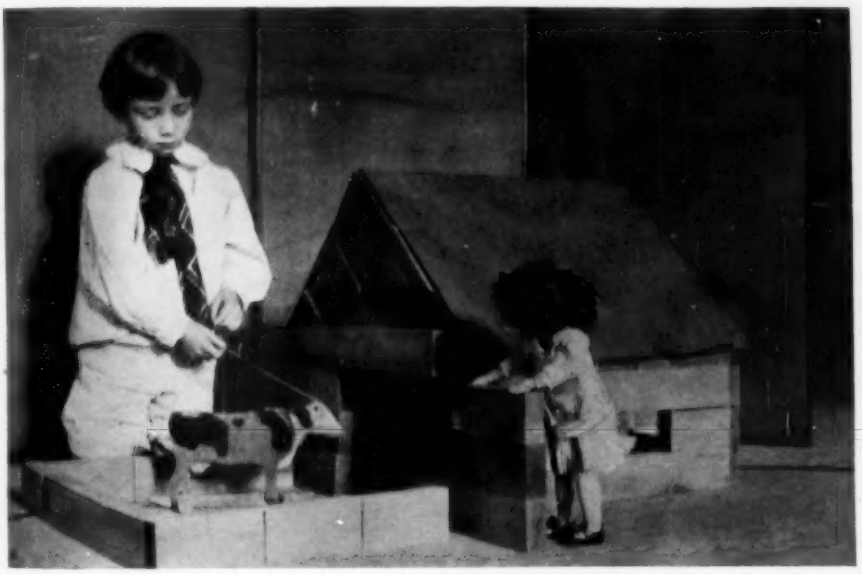
"The contribution of the children is instinctive or impulsive activities. Through materials, the teacher presents a stimulus. The first motion is along the lines of the characteristic feature (or mode of action) suggested by the material or stimulus. Among the children (as in every form of life in a group) variations take place. The valuable ones are consciously selected and made the basis of activities moving to higher levels of experience. Expression of idea through technique, which transformed through comparison, emphasis, selection, criticism and reconstruction, is made the basis of a movement to a higher form, with correspondingly greater control, deepening appreciation, fuller realization of the meaning and significance of the experience to which expression is given."

In another place in his paper, Dr. MacVannel states this more

[1] Paper presented at the Training Teachers Session of the International Kindergarten, St. Louis, 1910.

[2] The Materials of the Kindergarten, TEACHERS COLLEGE RECORD November, 1909.

MAKING BLUEPRINTS FOR CHRISTMAS CALENDARS



BUILDING WITH LARGE FLOOR BLOCKS—BARN FOR COW

briefly. "Method as the realization of experience involves—(a) Activity, in the sense of experimentation; (b) Selection among and emphasis of such variations as approximate to or manifest a general principle or standard; (c) Organization through emphasis, selection, imitation, suggestion and the influence of vital personality. The movement is through activity (experiencing) to selection, to higher activity through a ceaseless process of organizing and reshaping experience."

In the development of any material, as Dr. MacVannel has stated, there are three factors, the material, the reaction of the individuals using the material in the sense of experimentation, and the teacher who presents the material and organizes the experimentation of the particular group with which she is working. While this statement is applicable to both the student in the Training Class, and to their children in the kindergarten, it seems better for our purpose to illustrate the method as developing with the children, because in the movement from the first instinctive activity to the more perfected results of the oldest kindergarten children, every phase of the process may be illustrated.

The child's contribution to the process is activity in response to the stimulus presented in the form of material. His attitude to any object is always in terms of what he can do with it, and he discovers its possibilities through experimentation. The nature of the material gives character to the experimentation, dry sand is sifted through the fingers, the pail is filled with wet sand, turned over and a form appears, buttons, having holes, are strung on a thread, spools suggest wheels for the wagon made of a box cover, mud is patted into pies, pencil marks are scribbled anywhere and everywhere. Thus the teacher, in bringing to the child any kind of material, offers a particular stimulus, defines a situation. The problem then of the kind of material that should be presented to the child of kindergarten age is suggested. From the standpoint of our subject, "The Use of Materials," all material that is simple and plastic enough to be used by children of kindergarten age with an increased control, and a freer and more artistic expression of ideas, is suited to this stage of development.

Materials then are regarded in the light of stimuli to the child's instinctive activity. Dr. MacVannel's first statement suggests the method of development in a general way. Variations occur in the first response of the group to the material. The teacher's selection among these results is the basis for renewed activity on a higher plane because of an increased control over the material, a clearer consciousness of the ideas that may be expressed in that particular medium, and a renewed sense of the relationship between the two.

Variations occur at each stage in the process, through the characteristics of the material, such as texture, color, size, form, number, etc., and because of the way different minds react to any particular stimulus. The teacher's selection among the results of the activity is the element which brings about development in the use of the material. It is her realization of what is valuable in what has happened that lifts the unconscious expression of the children into something more conscious and more controlled, and unifies the experimentation of the group. But how is the teacher to know what is valuable in any experience? What controls her selection in each stage of the process so that there may be progression in the children's activity? If the use of material is to be really educative, the teacher must have a standard.

This standard must enable the teacher to realize both the end and the beginning of the process. To see the beginning, she must have a general knowledge of the various ways that children might respond to materials, and she must also know the possibilities of the materials themselves through her own experimentation and use of them as mediums of expression. In addition to this, there must be a realization of the possibilities of material through the results of others' experimentation and organization, and there must be an appreciation of larger and more beautiful forms of expression as embodied in the art products of the race. All these elements contribute to make a general standard, but the standard would have no meaning if it were not always viewed in relationship to the various stages in the child's development, so that through the organization of the activity there is a growing realization on the part of the children of the possibilities of

the particular medium. Therefore the standard must also include a knowledge of the children's reactions at various stages in the use of the material. The standard is necessarily both adaptable and growing. It is adaptable because it is never seen apart from the present experimentation of the group, however crude that expression may be. The teacher's attitude is constantly, "In the light of my standard, what is significant in what has happened." The selection is always in relation to the particular stage in the use of the medium, not the most difficult nor the most finished result is selected, but that which will best serve as a means of organization for the work of the whole group. The standard is a growing one because it is constantly enlarged by the renewed suggestions, offered by the children's activity from day to day, and from year to year, and by the increased elements of control thus offered the teacher. The teacher's larger appreciation and new ideals gained through experience also contribute to the growing standard.

I should like to suggest some practical results of: (1) The recognition of material as a stimulus. (2) The selection of actual results of experimentation as a basis for renewed activity.

(1) If material is regarded as a stimulus, the manner and form in which it is presented to the child are of the greatest importance. Material must be presented in an orderly and artistic form, combinations of color must be harmonious, the forms presented must be suggestive, and care should be taken in the combinations of different kinds of material. As the results of one stage in the activity are regarded as suggestions for further activity, the artistic mounting of the work and placing in the kindergarten room are of great value in the children's realization of the nature of the results, and the work bound in books may serve to each child as a summary of the process of various materials at the end of the year.

(2) The selection of the actual results of experimentation as a basis for renewed activity brings about a clearer realization on the part of the children of the nature of the standard, and supplies a standard that may be approximated by all the members of the group, because it is related to that particular level of experience. Then too, the expression is always the children's

own, and so has that freedom and naïveté which characterizes children's work, and which is often more artistic than the more conscious expression of the adult.

In using the same method with the students in the training class and with the children in the kindergarten, the student in her junior year is realizing the principles underlying the process through their constant application in response to the experimentation of the junior class. As the same principles emerge in the use of various materials, they begin to be defined as "principles." The student also gains a larger idea of the possibilities of each medium through the experimentation of the individuals in her own class, for while the method is the same with children and students, the capacity and experience of the maturer group of individuals carries on the process more quickly and with more finished results. The presentation of the results of others' experimentation as embodied in schools of weaving, folding, etc., also becomes a part of the student's knowledge of the material. In the senior year, the materials are considered in relation to the activities and capacities of the children, and given practical application in practice teaching.

A general idea of the movement in the process from the first experimentation to more adequate forms of expression has been given. I shall now try to suggest with more detail the nature of the experimentation, and the particular organization as related to successive stages in the use of the material. I shall then illustrate the process with two kinds of materials. To quote Dr. MacVannel's statement again, "The first motion is along the lines of the characteristic feature suggested by the material." For example, in painting the natural response would be the putting on of color, in sewing pulling the thread in and out of the holes in the card. In the first activity variations occur. In painting one child may cover the paper with color, another may put on spots of color, one may use a great deal of water, another very little, one may scrub with his brush round and round or back and forth, another use longer and freer strokes. This first uncontrolled experimentation has brought about a certain familiarity with the material before the teacher has emphasized any particular result. With the

repetition of the activity, however, the nature of the emphasis is not merely "putting on color" but "how it is put on." The emphasis may be upon spotting, or it may be upon covering the paper with long strokes of the brush, but through the control of the activity, the quality of the result has been improved. And so with all materials the first emphasis upon the characteristic activity suggested by the material leads to the organization of the process underlying each material, from just "putting on paint" to "how we put it on," from "putting a needle in and out holes," to "how we put it through one hole and into another so as to make a stitch." The variations that occur through the characteristics of the material offer a means of repeating the activity with every varying interest and new possibilities. The paper may be covered with one color, another paper have a different color washed on. Different parts of the paper may be colored, or two or more colors may be applied on one paper and the blending of color where they touch suggest floating one color into another. Papers of various shapes may be presented, offering suggestions for the placing of color, as around the edge of a circle, or in the corners of a square, etc. The repetition of the activity results in an improved technique, and because of this increased power over material, the results will become more and more perfect and more suggestive. Through this continued and varied repetition of the activity, there enters another element in the development of the process. Ideas are suggested by the accidental forms resulting from the application of the paint or by the suggestiveness of certain combinations of color. The wash may suggest sky, half the paper covered with blue and the rest left white may be sky and snow, floated colors be soap-bubbles, the rainbow or sunset skies. As the spots take on form, the round ones are beads, flowers, trees or fruit. There is now a new element in the developing activity, the relationship between technique and expression of idea. The idea that emerges through the activity is made more conscious through repetition with an emphasis on idea expressed through control of the material. "How shall we put on color to make it look more like sky?" or "Which way shall we rub with the crayon if we are making grass?" "How far up on

the card shall we draw the green stem if we are to leave room for the flower?" The result is always seen in relation to the way it may be obtained, or in other words the emphasis is constantly upon the activity in relation to its taking on form rather than upon the idea alone. Through successive stages in the process the technique becomes more controlled, the ideas become enlarged, the representation more adequate until finally there is such a relationship between the idea to be expressed and the ability to express it, that the child may make the medium serve his purpose. The teacher's first emphasis on technique was but a means to an end, material used as a medium of expression.

Having described the nature of the process, I shall now illustrate in detail with two materials the nature of the reaction to a particular stimulus, and its development through successive stages in the process. As the character of the material controls the response, it seems best to select for our purpose two materials differing in character as sewing and painting. It can readily be seen that the holes on the sewing card and the strips in the weaving mat offer certain suggestions, and impose certain limitations which are not characteristic of the more plastic materials such as clay or painting.

In sewing, a child is first given a card perforated with a few large holes. The holes may be arranged in a circle or spaced at regular intervals so as to cover the surface of the card, the child may use needle and thread or a lacing, the latter perhaps being easier to handle. The response to this material is naturally pulling the thread in and out of holes. As a result of this activity, several things may happen, either on the various cards of the children, or all may be combined on one card in this stage of experimentation. The thread may have been drawn through a hole and over the edge of the card into a hole on the side through which it was first drawn suggesting such a stitch as "over-casting." Again the thread may have been drawn through the card and put in another hole on the same side, producing a line on the face of the card. The variations in this form of the activity would be the different length of line resulting from putting the thread through a hole close to the one first used, or one farther away on the card. The stitch

then is the result of the activity, and it is the production of a stitch that characterizes this process as "sewing."

What shall be the nature then of the first emphasis, sewing over the edge of the card, or across its face? It is wholly a question of what end we have in view in the use of this medium. If we wish to teach "sewing," we would emphasize the overcasting stitch, but if we regard sewing as material unsuited to children of kindergarten age, we describe the process as "drawing with thread," drawing under certain limitations imposed by the holes on the card. And in this connection I should like to suggest that limitation in this and in other materials is suggestive, and gives power in the use of freer materials such as painting and crayoning. The emphasis on the line drawn on the face of the card gives the possibility of many variations, long and short lines, horizontal and vertical, straight and slanting, and combinations of these lines resulting in outlined forms. The emphasis on the line over the edge of the card would lead to a certain uniformity of result, offering no possibility for development in this kind of material. We accept, then, sewing as "drawing with thread." The first emphasis would be on process, or the making of a stitch in terms of the activity. "Put the thread through the hole, put it in another hole on the same side of the card, turn the card and put the thread in a hole on the same side that it is coming out. Always put it in on the same side that it comes out!"

As a result of "making stitches," there begins to be variation in the kinds of stitches. Again these results are made more conscious in terms of activity. If the suggestion has been long or short stitches, the organization of the activity would be, "Put your thread through and put it in a hole 'far away' or 'near,'" as the case might be. With the little children, learning the process would extend over many lessons, but the variations offered by the material gives opportunity for many repetitions of the activity, different colored worsted, different shaped cards, and different arrangement of the holes on the card.

Through the variation in color, and length and arrangement of lines, the child begins to associate ideas with the results of the activity. Such ideas as windows, ladders, fences, wheels,

balls, etc., emerge through the suggestion of form, and grass, flowers, trees, etc., through the combination of color and length of line. In every material, while the first emphasis is upon technique, idea is constantly associated with the results of the activity because of the constitution of the child's mind and his use of analogy. When objects begin to be represented, and the child has too little control of the material for any adequate representation, prepared material, in the form of picture cards, is presented. Objects of simple form, such as balls, clocks, fruits, horse-shoes, etc., are suggestive at this stage of the activity. The process of sewing round a horse-shoe is the same as round a circle, save for the double line. In painting and paper-cutting, the use of material prepared by the teacher serves the same purpose, resulting in an improved technique and a clearer idea of the object represented through the simple and artistic form presented. Nor is this prepared material suited to the early stages in the process alone. Whenever the children seem to need a more artistic form of expression than their technique allows, some beautiful form may be presented to them. There is then renewed experimentation with material that offers more possibilities as in sewing the card with more holes. On the square card, a line may be sewed outlining the outside square; the remaining holes inside may be considered as windows in a house, or result in arrangement in relation to the outside square, suggesting design. In this connection, I should like to suggest the organic relation, in a little child's invention, between what is sometimes called "design" and "representation." What an adult would term design, suggests to him some object of representation, and illustration becomes design because of an instinctive feeling for arrangement. The characteristics of the material suggests placing in the earliest stages of the process, and in even such a simple material as peg-boards, design is illustrated. Long cards suggest repetition of a simple unit, square cards, symmetrical arrangement around a center. Before there is any particular emphasis upon design, there is much experimentation in picture sewing according to the suitability of the material. The children's inventions on the cards with few holes are along the line of one object with some characteristic detail as a house with windows and a chimney, a boat with a sail, a tent with a

STAINING FURNITURE MADE FOR THE DOLL'S HOUSE

WOOD WORK—FURNITURE MADE BY CHILDREN FOR THE DOLLS

flag, etc. The cards with more holes offer the possibility of more detailed and perfect representation of the same objects, and also the association with other objects, as a house and trees, boats and water, birdhouse and birds, etc. Through emphasis and selection, there results a more conscious combination of details in representing objects and a more conscious arrangement of the objects in relation to one another, resulting in good proportion. The most artistic form of expression in any material would be a combination of various forms or units, that had emerged through experimentation, in an artistic whole. This statement is as true of the building gifts as of sewing or painting.

In considering the development of painting, I have already suggested the first steps in the process, the elimination of the activities that offer no possibility of development as "daubing" or "scrubbing," and the emphasis upon spotting or the washing on of color. As in sewing, the variations in the first stage in the application of color would be through the use of different shaped pieces of paper and the application of various colors. The results of this activity would be colored washes or the arrangement of spots in relation to the shape of the paper. When dry, these results may be used in many ways. On the blue wash which suggested sky, may be pasted stars and moon, other colored washes may be folded for book-covers, or picture frames, or harmonious colors may be cut into weaving mats and strips and woven. The landscape idea emerges, as has been suggested, through the use of more than one color. The blending of color may suggest stained glass windows or Japanese lanterns and the older children may be given these forms and may themselves select the most beautiful part of the wash to be cut out in the form of a lantern or a church window. This may be done by the teacher for the younger children, and mounted in this form. Or the process may be reversed, and the children given a form such as leaves or fruits, which they fill in with color and into which they float other suggestive colors. The emphasis upon spotting would lead to more conscious representation of form, as in sewing. Combinations of spots may suggest clusters of berries or the relation of petals in a flower, etc. As the medium becomes more controlled, and the ideas

more defined, the children perfect their results by a study of the real flower, consciously trying to represent the object as they see it. In decorating paper-plates, book covers, May baskets, etc., the process is raised to the highest form of expression in design.

In giving the process in such detail, my aim has been to show principles actually in operation, for that is method. I am aware, however, that it is not an easy task, in a written statement, to show the organic relationship between theory and practice. A discussion of principles may remain so general and uplifted that we lose sight of their implications in actual practice. On the other hand, in a discussion of kindergarten procedure, practice too often is regarded as a multiplication of devices and not as principles at work. But when one is able to apply intelligently these principles to all materials, there should be certain results which are a confirmation of a method that is lifted above the mere use of devices. I should like to suggest the nature of these results.

(1) An eagerness by the individual members of the group to use any material presented.

(2) Spontaneous expression from all members of the group, because of the use of their suggestions.

(3) A growing realization of the nature of the standard by the group because of the teacher's emphasis and selection of actual results.

(4) A developing power in controlling material, and in artistic expression related to the nature of the material.

The Method, then, of Using Materials is "through activity (experiencing) to selection, to higher activity through a ceaseless process of organizing and reshaping experience." And this is the movement through all Educational Theory, all discussion and criticism are for the sake of "higher activity" in the form of better teaching. All discussion and criticism in relation to Training School problems are but for the purpose of giving power to our students of Kindergarten Theory so that they may put this power into the actual operations of the kindergarten. For it is in our work with the children that we must justify our theories, and make our teaching a vital force in the field of Education.

PRINCIPLES UNDERLYING THE ORGANIZATION OF KINDERGARTEN MATERIALS[1]

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In the above title several things are implied which it would be well to state clearly at the beginning. "Materials" is a dynamic term. Matter is inert substance but "materials" indicates a user and a use. The word "kindergarten" shows that there has been a choice, a limitation of possible materials. "Organization" points to the employment of some particular method. If there is choice of material and method there must be some reason for the selection, some purpose to be accomplished.

Kindergarten materials, like all materials in educational institutions, have two users, the child and the teacher. There are two methods of use; from the child's standpoint they are means to educate the self, from the teacher's to educate others. There are two purposes involved in their use, unconscious education of the self, conscious education of others.

What is the difference between these users, methods and aims? The child has a very meager experience, a confused outlook, limited means of expression; the teacher has wide experience, clear judgment, many well controlled avenues for expression. The little child's method of using materials is to satisfy some impulse or momentary need; the kindergartner's method is to make the present use of material a step in the whole plan of education. The child's aim is to live the passing moment to the fullest of his ability, the teacher's aim is to produce a being who can live abundantly through life and in eternity.

Our greatest problem is to reconcile these two methods and

[1] Paper presented at Training Teachers Session of the International Kindergarten Union, Cincinnati, 1911.

aims so that both users of kindergarten material will feel that they are really working together, re-enforcing each other's efforts and attaining a mutually satisfactory result. Since the child lives almost wholly in the present and the adult inclines towards viewing this moment solely as a part of the necessary preparation for the future, there must be some concession on the part of both if they are to come into sympathetic relationship. The child will be influenced by the point of view of the adult with whom he comes in contact, but he will be totally unconscious that he has so accommodated himself. The kindergartner can adapt herself with deliberate intention. She understands her own aim and also that of the child, she knows his present experience, his interest and capacities, she comprehends the steps by which he must advance. She can put herself in the child's place and realize what is to him the value of the present situation, while at the same time she sees with clear vision the value that it may have in forming mature ideals. The kindergartner must accept the immaturity of the child's desires and interests, but by the choice and encouragement of those she knows to be of worth, raise them to a higher level. It is this raising of a child's experience by selection which constitutes the organization of experience.

This selection must extend to all aspects of the child's experience. Out of his environment the kindergartner must choose for emphasis such facts as can be shown to have the greatest significance. She must use this experience not only in the way that he is using it, for the gratification of the passing moment, but also so that it will develop right attitudes towards the environment. She must encourage the expression of his idea which he enjoys and which calls for the best result that he can attain. Thus the organization of experience involves the selection of the things which a child uses and of the way in which he uses them. This selection is the organization of materials.

Froebel stated the principles which, used in the raising of experience, would organize materials upon a basis acceptable alike to teacher and pupils in their methods and aims. These he gives as self-activity, organic unity and development, used unconsciously by the child, consciously by the adult.

In order to view her work clearly as based upon these three principles, the kindergartner must realize wherein her use, that is, her method and aim, should differ from that of the little child. When she considers the principle of self activity, she must understand that the child expresses in his actions the impulse which is uppermost at the moment; the kindergartner should seek to guide him into the habit of expressing good impulses and later into the habit of judging his desires and making a choice of the better. The child aims like all living things to continue his existence by keeping active but this activity is stimulated by some accident of the environment; the kindergartner's aim is to make this activity of value by providing an environment which will be a stimulus for such acts as were found of worth in the development of the race.

The idea of organic unity as a principle is far from a child's thought but he delights in finding out what he can do with the things around him, of what use they are to him and in this way he discovers and reacts to their peculiar properties. (This "use" is not always physical, for instance, objects of startling size or activity as engines or birds, arouse the imagination and are found useful in his mental life.) The child also relates things to other things or people because of their use to each other. He may infer a relation also because of the usual juxtaposition of objects or because of their superficial resemblance as in size or form. For him each striking object generally stands as the center of its group, unrelated to other groups. The teacher can attract attention to things which will call for the discrimination of significant resemblances and differences and at the same time give these things a richer meaning by showing them in their relations to other things, that is, by showing their usefulness to each other. The child aims to understand himself and his world so that they may interact in a way which will be satisfactory to his developing personality. The teacher sees that this desire rightly guided will tend towards making the child feel himself functionally related to the world, responsible for a share in its progress, and, also, he will form the habit of studying things in their organic relation, distinct in themselves and yet necessary to the life of every other part.

When considering the principle of development the kindergartner sees that a normal child expends energy in gaining physical and mental control over his surroundings; she can stimulate the desire to reach such a goal that the full amount of effort of which he is capable will be put forth to gain the knowledge which will be of later value. A child in order to be happy must use effort in developing physically and mentally. A teacher sees that if he gains the habit of using the full amount of effort in the right direction, he will not only progress faster now but continue at a more rapid pace and reach greater heights.

A child's method and aim are all for the satisfaction of the present although based in a rudimentary way upon self activity, organic unity and development. The kindergartner's work is to provide opportunities for the child to gain the habit of using them in the most efficient way. She is conscious of her principles and must base her choice upon their widest interpretation. In her presentation of kindergarten materials she must try to aid the child to organize them by using them as means (1) by which he can act upon his experience for the purpose of expressing the best idea that he is capable of conceiving; (2) by which he can be led to see more fully the distinctive characteristics of facts in his environment and also their interrelation; (3) by which he can make use of his highest capacity for energetic action and accomplish a result of value in his progress towards race civilization.

The conscious use of materials has come about very gradually in man's development. In the progressing forms of animal life there was a continuous adaptation to environment, purchased by the elimination of those least adaptable. Finally there arose a race of beings who could imagine the possibility of changing the conditions which seemed to have the controlling power. As man's imagination grew, he strove ever more vigorously to bring about the seemingly better conditions. Man's consciousness of his distinctive function in the world, of adapting the environment for the sake of a far goal, was a very gradual development of thought. He still uses much of the knowledge that he has gained from contact with the world, to build up reflexes to meet old situations. From time to time wise men

have arisen who have seen the advantage in some accidental variation of old customs and have been able to meet other problems by modifying old usage. Then has arisen the idea of the possibility of altering the situation itself. Imagination began to grow through the presentation of actual physical conditions to be met and continued growing by means of the problems man feels in striving to expand on all sides of his developing nature.

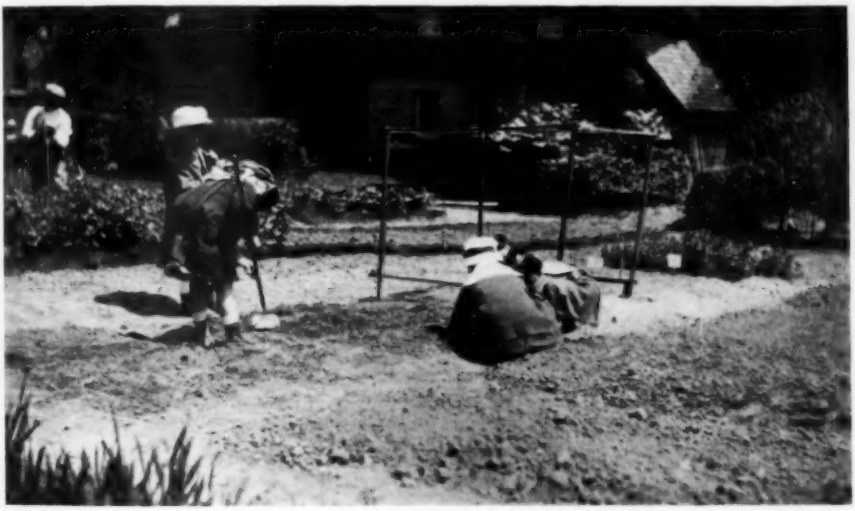
It is through the long cycle of change of attitude towards the outside world that a child must go. At first he is governed entirely by circumstances but, long before he is of age, he must realize to what degree he can, and for what purpose he should, control his environment. The tiny baby is constantly reacting towards his surroundings but each stimulus conditions its response; the body is used like a mechanism. When he drops the spoon which is in his hand, not solely because the activity is enjoyable but because such action has previously given a pleasing sound, he has progressed through centuries of man's upward struggle. He is an incipient artist, a musician; his object has been pleasure unassociated with any necessary act involved in the preservation of physical life, and the technique by which the result was accomplished has also been ejoyable. When a child is stimulated through some of the avenues of impression to think of a horse and then searches for a cane or chair with which to express and so complete his idea, he is using a high form of thought in a rudimentary way. The act is not a direct response to the stimulation of the material which he later uses to carry out his thought; he has made for himself an environment and has controlled the conditions which seemed to govern him for the sake of something more satisfactory, more ideal than his present surroundings. A four-year-old child would need to have the material near at hand for the completion of his thought because he is not mentally strong enough to sustain an incomplete image for more than a few seconds, but in this illustration, he has made an attempt at the method of thinking which has resulted in the highest achievements of the race.

When a child reaches kindergarten age, he is ready to use material in several different ways. (1) There is still much that

he may learn by actual contact, many actions may still be impulsive responses to the qualities of the matter presented. (2) Many of the child's actions may be dictated by an adult or be imitations of copies set for him. (3) A child may be led to improve upon some form which he made while experimenting with the material. (4) Some idea may be stimulated, which in order to be complete must, through the expending of the full amount of effort, arrive at a goal which involves a clearer realization of things as distinct and also in their relations. This method may be called either the suggestive or purposive; if viewed from the teacher's side, it is suggestive, from the child's, it is purposive. It is founded upon the principles which Froebel realized as most educative because they organize experience.

A very simple illustration of the above methods may be given in the use of the divided cubes of the fifth gift. (1) A child might be left free to discover the possible uses of the half cubes, for instance, for a slanting roof; (2) some form with such a roof might be dictated or be imitated; (3) some form that a child had accidentally made, might be repeated with suggested improvements; (4) a different kind of material might be used as a stimulus, such as a picture of a barn, in order to arouse the desire to make such a form, and the blocks then placed in the child's hands. A double stimulus would be applied through picture material and block material. The child would have a more or less definite idea to express, would put forth effort in trying to accomplish it satisfactorily, would control means to bring about the end which he feels of value, and would discover the possibilities of the material itself. The more developed children can be led to understand why man uses the sloping roofs, and for them the stimulus provided might have been in the form of a little problem, how to make a roof which would shed rain. Sometimes the older children may have an idea so clearly in mind that they can make a choice of the familiar material which they think would be best adapted to carry it out; it is possible that several kinds of material might be chosen to express the same idea, in this way would be shown the unity of thought underlying manifold expression.

CLAY MODELING AND SEWING—PLAYING WITH MARBLES AND BAGS



SPRING PLANTING—THE PUMPKINS WERE USED FOR THE HALLOWE'EN PARTY

These different methods represent the different uses which man has made of his environment in gaining control over it. Each has some value in developing the right attitude towards the surroundings. None should be omitted in the kindergarten, none used exclusively. (1) If experiment is never allowed in the use of materials the children will not learn how to investigate, they will be helpless when confronted with any new problem, they will never advance beyond their companions but will lose the exquisite joy of discovery and contribute nothing to the knowledge of their own world. If no other method were used there would be only slow progress. A tendency would be formed to be governed by the moment's interest and not to sum up or connect. Respect might be lost for material and effort would lie dormant if no product could be conceived better than the one chanced upon. (2) If a child never imitated a good copy or followed a dictation he would miss some of the uses of the material which he was capable of appreciating but not discovering for himself. If this method were used exclusively, it would develop a habit of following blindly and the idea of taking the initiative would never be formed. (3) Where there is no repetition for the sake of improvement, there is a tendency to be satisfied with results that have not demanded a child's best effort, many things are attempted but nothing done well. A child can measure himself and gain fresh impetus for further effort when he sees two similar products placed side by side, one the result of to-day's work and the other of last week's. If this is the only method employed, the child uses each material for itself, never in relation to any other. It gives him a disconnected view of his environment, he will not feel the unity of thought underlying its various expressions in material. (4) If the purposive method is never used, the materials will never be organized upon the highest basis. A desirable end in view demands a child's best effort, right stimulation will not only call forth self activity to conceive that end, but also require that in its accomplishment control shall be gained over the particular material used and its relation shown to other materials through thought. If this method should be used exclusively, it would defeat its own object, the children would become dis-

couraged and effort paralyzed becaused they would be tasked to arrive at a result before they could control the means through which to attain it.

Another illustration will show more clearly the distinction between the purposes aimed at in employing methods (3) and (4). In the use of clay, after the first periods of instinctive response to the plasticity of the substance, the teacher might help the child to improve upon some of the forms which he had previously made by accident. This method aids the child to gain control of the particular material and if repeated in use of other materials, would form a habit of striving for better expression through all means at hand. Yet this is only one aspect of the right attitude towards the environment. There should be an expression *of something,* the environment should be controlled not merely for the sake of control, but because this control is demanded *in the relating* of experience. While respecting the laws of the material a child should make it conform for the expression of the thought which is seeking for completion—relation—in his mind. In using the purposive method, with clay, a child might be aroused to think of some form which would be related to the experience through which he was passing and which could be adequately made in clay and also would require an improvement upon a form previously modelled. One material would be made to re-enforce and interpret the other and the child would gain a feeling of the relation of the resources at his command.

If a child is to develop towards his environment, the attitudes which man appreciates as of worth, that of trying to understand it, of respecting its laws, of improving upon it, of bringing it into a unified relationship, opportunities must be given to use material in all the four ways mentioned above. Yet, if the organization of materials is our object, that method which accomplishes this purpose best should be the one used whenever possible. All methods should be used with each material at some time in a child's life but some materials are much more difficult to control than others and with these materials having complex laws, it may not be possible to use the purposive method in the kindergarten except in a very rudimentary way. With

many kinds of handwork it is possible to use all methods at the kindergarten age. The period between four and six years is the time when there is a decided change in the character of the purpose for which materials are used. At four the gratification of the passing moment is all that is sought; at six, the result and simple means by which it is attained are much enjoyed. These facts should in a general way decide the kind of method predominant at the beginning of the kindergarten and that at its close. It should be mainly experimental at the beginning and purposive towards the end.

The above facts decide only the general outline of method in the program. The factor which determines the particular kind of method used in each lessen is the degree of control which the child has gained over the material placed in his reach. Opportunity should be given for instinctive response towards new material. The next periods might be devoted to the improvement of some form previously made very crudely. When a fair amount of control has been acquired, the child may seek to express some idea that has been roused through other material. Imitation may be used at any time that the kindergartner feels that the child is ready for some use of the material which he would miss or be slow in discovering. Dictation can take the place of imitation but it must be remembered that "come" guides a child better than "go." Dictation is excellent as a playful test of what a child has learned about the particular material.

The function of the kindergartner in the child's organization of materials is simply to adapt the environment so that it will provide proper material. This material should respond to some desire of the child and yet stimulate towards higher attainment than he would reach alone. The kindergartner has organized her materials in so far as she can see them as response and as stimuli.

Each material which we now use in the kindergarten had some definite part to play in the organization of the experience of the race. Only very brief mention can be made of a few of these materials and their function. The best stories have been interpretations of the truths underlying action and they

have aroused men to strive for ever more worthy ideals. Games have afforded an opportunity for the young to learn valuable lessons quickly through imaginary rehearsals of what was taught to their elders by wrestling with actual conditions. Handwork has enabled man to learn more definitely about his surroundings and has brought to him the enlargement of personality which is felt by one who understands his world and can control it in order to create permanent results.

In the application of the purposive method to handwork, distinction must be made between the two aspects of the value which man has found in its use. (1) He has been able to experiment and learn about his world, and (2) he has felt any result accomplished when effort has been called forth, as a part of his very self, his energy has gone into the product and made it a thing alive with his spirit. Froebel formulated for us the "gifts" which allow most freely for the experimenting and discovering and the "occupations" which emphasize the product.

Since effort is to be demanded with this purposive method, it is well to know in what direction a child should be encouraged to expend it. In the easily transformed material, blocks, sticks, etc., Froebel saw that children worked as adults do for three different reasons, depending upon the aspect of their experience which they were emphasizing. "Forms of knowledge" summed up what they knew about their environment; "forms of life" called for more activity and consequently more experimenting and learning; "forms of beauty" called for an arrangement, a choice, which gives a contemplative attitude towards experience. These same divisions may be found in the use of the occupations. Those which sum up experience might be called the graphic; those which result in forms which demand more activity, the constructive; and those which call for selection or discrimination of values, the aesthetic.

If the kindergarten is to provide for all ways of using material which are educative, there is a variety in handwork which is bewildering in its richness. The use may vary (1) with stimulus applied, (2) with purpose appealed to, (3) with method employed, (4) with character of result desired, permanent or

transitory, (5) with kind of material presented, and (6) with the way in which means are adapted to the end.

The stimulus could be language, a story, conversation or song. It could be a picture. It could be some experience, such as a walk or a flower. It could be some other child's use of the material or some imaginary need, as a coop for a chicken. This list could be added to indefinitely.

The purposes which the child might have in mind are mentioned above, (1) to tell what he knows about a subject, (2) to play out some experience, and (3) to show its beauty.

The methods might be (1) placing materials in the child's hands for experimentation; (2) dictating or showing some form; (3) improving upon a form previously made; (4) arousing an idea and providing means for its adequate expression.

The gifts could be used when the child needed much experimentation to arrive at a desired result or when the properties of the material were demanded for the result aimed at. The occupations could be used when the children were able to imagine and strive for a more or less permanent result.

The handwork materials vary from blocks to seeds, from clay to paper cutting. Each is appropriate for a certain kind of experimentation or product and they vary in complexity and so respond to the child's desires at different stages of his development.

The use can vary by the way in which means are adapted to ends. A child might have the material placed in his hands which would suggest very plainly the carrying out of his idea. With more complex material children might work together for a common product, which could then be copied exactly or modified according to individual taste. At other times child and teacher might consult as to the best means for arriving at results. Occasionally a finished product might be shown which would spur the children to discover the way in which it was accomplished.

It is by means of these numberless ways of using handwork that the little child's experience can be organized. Growth comes by lifting this present moment's act above the level where the

child's unaided efforts would place him. A beautifully finished product does not necessarily imply a development of the power of organization in the child's mind. In order that the product should be educative it must be the result of his self-impelled desire to express, his own power of adapting means to ends, and it must show things in the relations he has been led to understand. Browning voices the relation between product and effort in Rabbi Ben Ezra.

> "As it was better, youth
> Should strive, through acts uncouth,
> Towards making, than repose on
> Aught found made."

The story of man's progress is the story of imagination and effort working hand in hand, the one thinking ever more of God's thought, the other grasping ever more of God's spirit. The teacher's duty and privilege is to lift humanity so that it may become more conscious of its divinity. This selection, this lifting, involves the organization of materials upon the principles which God is revealing to man in His work.

THE GIFTS[1]

Luella A. Palmer

So much could be written and said about the "gifts," their nature, purpose, and method of use, that it seems a very wide subject for a twenty-minute discussion. After a paragraph or two of introduction with regard to the nature of the gifts, this paper must be confined to a consideration of the purpose in their use.

As man's knowledge of the world grew, he found that this knowledge fell into related series, a time series (history), a place series (geography), an order series (arithmetic), a form series (geometry), etc. The separation of knowledge according to these aspects was an advanced and highly organized way of looking back and interpreting actions which had arisen in concrete situations. Knowledge was at first a vague whole, the first groupings were large and ill-defined, very gradually details were discerned, and classifications became more limited and more definite.

When schools demanded books which would present to children knowledge in concentrated form, the text-books provided were written by men who had a logical grasp of each subject. They therefore presented information in a logical order. Provided in this way it was expected to give the same insight into the subject which the adult had. Educators did not realize that a child's mind could only gain through actual experiencing that power of organization which would enable him to relate in definite series, to see logical order. They did not understand that the powers of the mind are organized through the following out of a psychological order and that in the process would come the comprehension of an ever more logical order.

Schoolmen and teachers have now become conscious of the defects in their theory and are rapidly changing their methods.

[1] Paper presented at International Kindergarten Union, Washington, 1913.

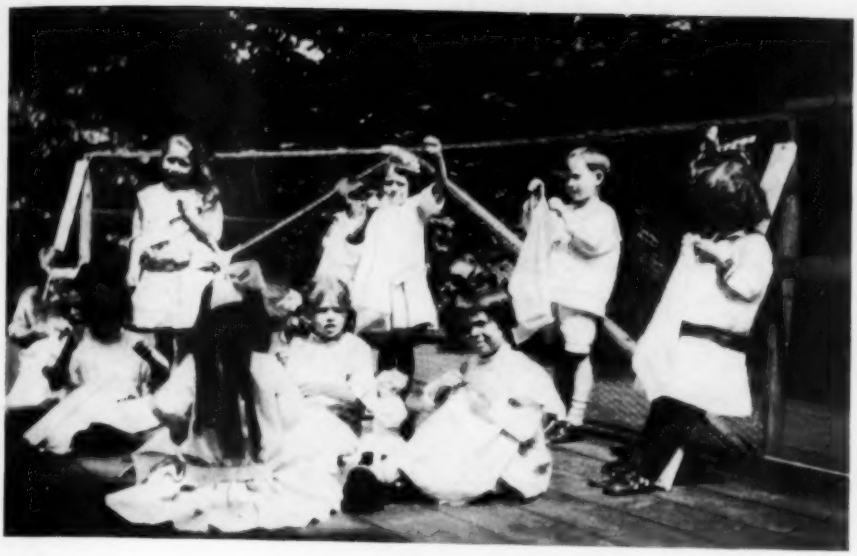
The worth of any study is now felt to be the degree to which it provides material for the child's mind in its developing. The presentation is not according to the logical development of the subject matter, but the employment of that sequence "which is essential in socializing and psychologizing the experiences and activities." The distinction between information and wisdom as results of education is being sharply drawn. Dr. Dewey says: "Information is knowledge which is merely acquired and stored up; wisdom is knowledge operating in the direction of powers to the better living of life. Information, merely as information, implies no special training of intellectual capacity; wisdom is the finest fruit of that training."[2]

Kindergartners must not be the last to criticise their own work in the light of the theories which are making for more efficient education. When Froebel outlined the "gifts" and "occupations," he wrote for the kindergarten what corresponds to text-books of other grades. These presented what he considered subject matter for early education; they presented it logically and it was to be given to the children in its logical order so that the children would become more conscious of that order. They were to learn verbally the facts about it so that these facts might make some impression upon the mind. The recent investigations into the working of the human mind have taught us that although the adult may see a definite logical connection within materials, this cannot be brought to the consciousness of immature minds; it can only be viewed logically in so far as it has been *used* psychologically. Logical insight will only be granted gradually and only after many vital experiences with the material. In the light of this fact, each kindergartner must test the worth of any material that she uses and its method of use.

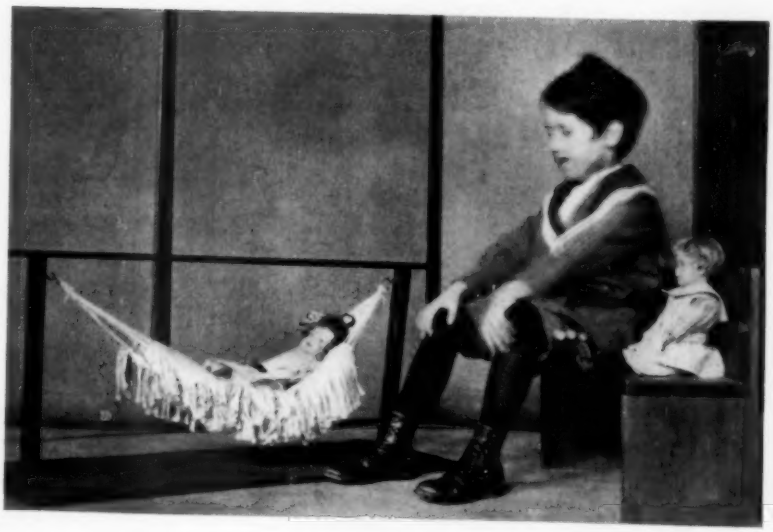
The "gifts" as Froebel formulated the series may be considered in three ways.

1. As materials forming a complete logical unity within themselves.
2. As materials which the teacher uses to guide the children.
3. As materials which the child uses to organize his powers.

[2] Dewey: How We Think, page 52.



SEWING—MAKING KINDERGARTEN WORK APRONS



WEAVING—PUTTING DOLL TO SLEEP IN HAMMOCK MADE BY CHILDREN

1. That there is such a logical relation between the gifts is interesting, but that it is necessary to have materials for a five-year-old child which will show this relation, is another question. The completeness of the circle which they form is entirely beyond the vaguest comprehension of a little child. The materials which should be chosen for his education are those which will present the amount and degree of logical order which he is capable of comprehending.

2. The kindergartner can use her material in two ways: by emphasizing (a) material or (b) the child.

(a) If she endeavors to bring to the children an idea of the connectedness of the material, she must plan a series of steps in which the children are to walk. These can be taken either by following direct dictation, or by such careful limitation of the child's possible advances that only the right step can be taken.

(b) If the kindergartner views the gifts as means by which to develop the child's powers, the consciousness of their logical order will be present in her mind only as a goal which she hopes the children may reach some day. She will view each separate material in the light of its worth for organizing the child's present experiences and activities. This may lead her to discard some gifts and emphasize others. Such as she retains will be used for a purpose exactly in line with the child's purpose, except that she will realize which paths will lead most surely toward the later logical interpretation of the universe, and the child will only unconsciously strive toward the same result. Since "the psychological and the logical . . . are connected as the earlier and the later stages in one continuous process of normal growth"[8] the kindergartner will try to use the materials in such a way as to follow the order of *mental growth*, rather than the order within the material.

3. The child's experiences and activities can only be organized through a sequence which is sociological and psychological. This seems a vague statement. It means that what is provided in a child's environment and what he is encouraged to do, will arrange his ideas in the best way when such things appeal to

[8] Dewey: How We Think, page 62.

his gradually expanding nature and lead him toward acceptance of social standards. If the gifts are materials which help a child to organize his powers, they must give him such experiences and call forth such activities that his mind will be developed and in the direction that humanity has found of most worth.

With regard to point (1), to see the gifts as a complete logical unity is not the immediate purpose in the kindergarten. With regard to the point (2) the kindergartner should use the materials in line with a child's best development. It is the gifts in relation to the last point as materials which the child uses to organize his power, which will be taken up in detail in the rest of this paper.

The earliest gift lessons somehow left the child out of the planning except as a kind of mechanism; by supplying the power which moved the gifts in a certain way, he was supposed to connect them with a cog which moved his mental machinery in the same direction. The results were to be forms of life, knowledge and beauty as judged by the adult, that is, the results were in the material and it was hoped that corresponding results were within the children's ideas. The methods were to be dictation first and foremost, then imitation, etc.; methods were something contributed entirely by the teacher. In most kindergartens of to-day, the forms made with the gifts may appear much the same as those of fifty years ago, but each one is considered in the light of the development which it has given to a certain aspect of the child's nature. A "form of beauty" is not such *for educational purposes* unless it is evolved from a child's own feeling and is the most beautiful which *he* can make.

The methods which are educational must be those of the mind's own working. "Thinking involves the suggestion of a conclusion for acceptance, and also search or inquiry to test the value of the suggestion before finally accepting it. This implies (a) a certain fund or store of experiences and facts from which suggestions proceed; (b) promptness, flexibility, and fertility of suggestions; and (c) orderliness, consecutiveness, appropriateness in what is suggested."[4]

[4] Dewey: How We Think, page 30.

This can be applied to a child's use of material. (a) The mind must have something to work upon, consequently the normal child is curious and tries to find out things; (b) the mind must have a number of ways of reacting upon material, so the child builds up and tears down an infinite number of times; then (c) the mind finds some order in these many suggestions and arranges them for easy reference.

Left to himself a child might evolve relations between materials which would be trivial. It is the teacher's duty to help him arrange his experiences in ways which will be most useful. This order is best developed by providing some stimulus which will inspire a child to outline some end, and then find suggestions which are most appropriate to achieve this end. The mind thus forms a habit of calling up suggestions, relevant because of some classification which is vital and then choosing those which are most significant for the occasion; this is reflective thinking or reasoning.

The three aspects of mental activity outlined above, investigating, testing, and arranging, represent the normal process of a child's mental growth. It is only after much direct contact with various materials that an individual is willing and able to learn from the experience of others. There are, therefore, three general purposes in the use of material: (1) to discover its possibilities; (2) to apply this knowledge, get a rich variety of experiences in connection with it, and (3) to choose some end which will bring order and consecutiveness into these suggestions.

With these general purposes in mind, the specific purposes of different gift lessons might be as follows:

(1) To investigate, to discover properties of the material, its characteristics and possible uses.

(2) To formulate some purpose, possibly suggested by the sight of the material, and to control material to carry it out.

(3) To observe and follow another's use of material.

(4) To formulate a purpose in line with some past experience which has been vivid, and to control material to express it.

(5) To follow another's use of material because it is well adapted to express some idea about past experience.

(6) To discriminate between the values of the material in order to choose the kind best suited to express an idea.

(7) To exercise memory by repeating some form which has been made at a previous time.

(8) To express the beauty or scientific facts which *he has discovered* can be shown through the material.

(9) To show control of the technical naming of the material by following a dictation.

(10) To coöperate with others in the use of material, by adding to some large form, or by building a smaller form which is needed to express an idea which has been decided upon by the group.

Lessons given with these different purposes in mind would take into consideration the mental development of the child through the use of material, the social values that may be found in using materials, and also the characteristics of the materials used. While all lessons would have all of these purposes in some degree, for instance, discoveries should be made every time the material was handled, point (5) states the one which seems to include them in equal degrees, the other lessons emphasize one aspect more than the others. Points (3) and (10) emphasize the social aspect; points (2), (4), (7) emphasize the psychological; points (1), (8), (9) emphasize the material; point (6) both the material and the individual.

How would lessons given in these ways help to organize a child's mind?

(1) If given in the right way a lesson with investigation as its object would help a child to gain an *attitude* of trying to learn the possibilities of any new material and of trying to interpret or use them. He would become alert to situations and eager to find problems. Kindergartners have allowed too little for investigation, they have felt it necessary to tell children many thing which they could find out. "For teacher or book to cram pupils with facts which, with little more trouble, they could discover by direct inquiry, is to violate their intellectual integrity by cultivating mental servility."[5] Even the facts which we have thought necessary to tell children about the gifts have

[5] Dewey: How We Think, page 198.

not been the most important ones for them. "Variations in form, size, color, and arrangement of parts have much less to do, and the uses, purposes, and functions of things and of their parts much more to do, with distinctness of character and meaning than we should be likely to think. What misleads us is the fact that the qualities of form, size, color, and so on, are *now* so distinct that we fail to see that the problem is precisely to account for the way in which they originally obtained their definiteness and conspicuousness. So far as we sit passive before objects, they are not distinguished out of a vague blur which swallows them all. Differences in the pitch and intensity of sounds leave behind a different feeling, but until we assume different attitudes toward them, or *do* something special in reference to them, their vague difference cannot be *intellectually* gripped and retained."[6] A child must build up a variety of experiences before he can discriminate those things which adults feel are values.

(2) When material is placed in a child's hands (with which he has already experimented) he ought to be able to formulate such a purpose for expression as can be carried out through the material; in other words, he ought to adapt his ideas to bring them somewhat in line with the possibilities of the material and then have perseverance enough to arrive at his self-determined end.

(3) It is good practice for a child to follow others sometimes and particularly when some one has discovered a very good use of the material. It not only gives the child a good model but it spurs him to strive himself for better interpretations of the material.

(4) A lesson which leads a child to formulate a related purpose and then express it, will develop reasoning and perseverance, and calls for creativity of the highest kind. A child must be inspired to want to express a certain idea; he must think of many different possible ways in which he could express it, select the best, and then persevere to the end to carry it out.

(5) A lesson where the children copy another's model because that other has been able to plan a purpose which is connected

[6] Dewey: How We Think, page 123.

with what they are trying to express, has the same kind of social value as the third type of lesson, except that the purpose is a little more organized; it is the controlling of material, not to make some irrevelant, incidental object, but to follow some connected line of thinking.

(6) When children choose the material which is best adapted to express some idea, good reasoning ability is developed. Such a lesson calls for some vivid idea to be expressed (in order to give some purpose for expression), then, a consideration of many possible ways in which it can be carried out; next, the selection for definite reasons of that material which is best adapted to (has greatest number of possibilities for) expressing the idea; and, lastly, the sustaining of the effort until the completion of the idea.

(7) Repeating a form is a play which the child likes to have with his own mental control; he likes to test his power of recalling some act which it gave him particular pleasure to accomplish. He relives the joy just as an adult does when he repeats the story of some happy experience.

(8) Through the use of the material a child will discover that it is beautiful when placed in certain ways, or that there are certain numbers, size, and form relations between different parts. If a problem is set before him as, for instance, to lay the longest possible sidewalk with the bricks, he will be elated over the solving of his problem. Care must be taken in the presenting of problems; only a few should be given in which the accomplishment of the deed is the sole end sought; this is not a high aim. Activity which has a purpose beyond that of its own realization is the kind which is of most benefit to mankind.

(9) Through playing with the material a child will discover that certain possible uses of material are accompanied by certain similarities in form as, for instance, that it is best to choose an object with a flat surface if it is desired to have a form which stands still, or, that objects with long sides make higher houses than those with short sides.[7] These characteristics linger on the borderland of knowledge unless they are given a name.

[7] Refer to Dewey, page 123.

It makes them more definite to provide a term which the child feels will cover the facts which *he has discovered,* and which will be intelligible to his associates. A technical term should be given in order to "preserve a meaning" or to make it possible to "transfer a meaning" which a child has found in his use of materials. A dictation lesson should not be one in which the teacher has done all the thinking for the child and he has merely followed directions. "Sheer imitation, dictation of steps to be taken, mechanical drill, may give results most quickly and yet strengthen traits likely to be fatal to reflective power. The pupil is enjoined to do this and that specific thing, with no knowledge of any reason except that by so doing he gets his result most speedily; his mistakes are pointed out and corrected for him; he is kept at pure repetition of certain acts till they become automatic."[8] A dictation lesson should be a playful test of a child's grasp of the terms which show the definiteness of his discrimination with regard to the material. Such a lesson should help him to make his ideas clearer. The word should always come after experience with the material; it should represent a summing up of experience.

(10) A lesson with the purpose of coöperating with others in the use of material would demand quite a degree of social control, a willingness to subordinate one's individual preference for the sake of making the group result more complete. This could only be done with older children in the kindergarten. The results in the material, therefore, should show a good understanding of its characteristics and of selection of the best means to get the result. Such a lesson as this would show the degree to which a child had been led to organize his ideas of the material and of himself as an individual in the group. It would call for reasoning, perseverance, creativity, coöperation.

Lessons of all these different types are needed in order to appeal to the whole nature of a child, yet those which organize his powers on the higher planes should be given as soon as he is ready for them. The kind of material used, the ease with which it can be controlled, and the number of times it has been used, will govern to some extent the type of lesson, although

[8] Dewey: How We Think, page 51.

the first use of any material would probably be that suggested under (1).

Not all of the Froebelian gifts could be employed in the ways suggested above, because they are not the best material through which a child can expand socially and mentally at the kindergarten age. That is a story beyond the twenty-minute limit. It can merely be stated dogmatically that the Froebelian building blocks are the best materials that will be found to help in a child's growth; that sticks, seeds, and colored balls are materials which a child enjoys and which can be used educationally. There are many doubts as to the value of the rest of the gifts. The above types of lessons can be used with any material suitable to be introduced into the kindergarten.

In the limited time I have tried to show how teacher and child can be in perfect sympathy by providing such stimulus for expression that the child will delight in putting forth all the energy which he has at his command and in the direction which the teacher knows will be of value in his steady development. Lessons given for the purposes stated are much more difficult to arrange than the ordinary sequences, giving logical steps in the manipulation of the material. They require on the part of the kindergartner, (1) a working knowledge of the normal process of mind development; (2) an intimate knowledge of each individual child so that he can be helped to his next step in advance; (3) keen observation and ready adaptability to take advantage of contributions which are of value to the individual or the group; (4) good control over the possibilities of material and of its educational presentation. Even a poor teacher can follow a series of logical lessons and dictate the forms to children gaining visible results which appear fine on the surface; it takes a superior teacher to respond to each child's need so that he is developing at the rate which is most consistent with his continued and steady progress. A teacher's method is "anything in the atmosphere and conduct of the school which reacts in any way upon the *curiosity*, the *responsiveness and the orderly activity of children.*"[9]

[9] Dewey: How We Think, page 46.